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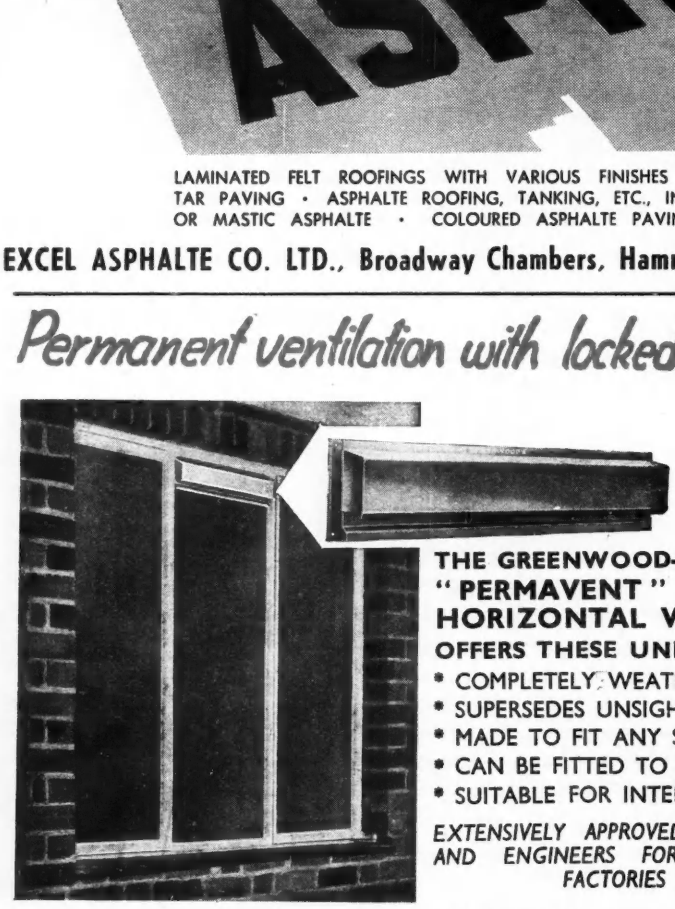

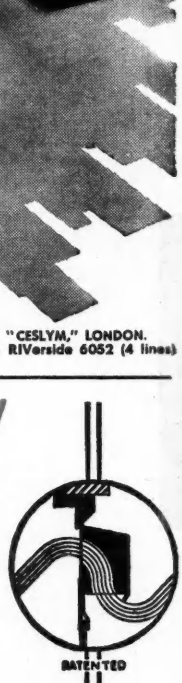

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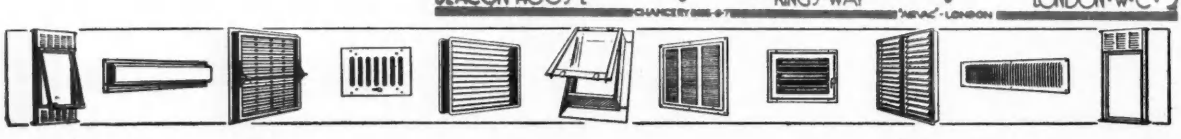

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THIS WEEK'S NEWS

THE ROYAL SCOTTISH ACADEMY have elected as Associate, Mr. Basil Spence, O.B.E., F.R.I.B.A., F.R.I.A.S. *p.* 507

SOUND ECONOMIES can be made in house building by the acceptance of satisfactory and common-sense standards of 120, 110, *and* 65 *sq. ft. for the bedrooms, said Mr. Geoffrey Hopkinson, chief assistant architect, Bracknell New Town, when he gave an address on "Economy in Housing" in London on March* 31. *p.* 522

THE DAMAGE suffered by the building and civil engineering industries in recent years as a result of restrictive controls, was referred to by Mr. David Eccles, Minister of Works, at a luncheon of the National Council of Building Material Producers, held in London on March 25. *He explained his policy to encourage the expansion of building production.* *p.* 525

A SUGGESTION that firms with competitive lines with a potential appeal would do well to seek now a foothold in a country such as Canada, which had an expanding, almost ceilingless economy, was made by Mr. Ian M. Leslie, at the Building Industries Luncheon Club on March 26. *p.* 526

IN HIS ANNUAL REPORT, Sir Thomas Bennett, chairman of the Crawley Development Corporation, stated that they had reached the conclusion that in a country town high flats could not be justified either socially or economically. *p.* 527

THE AVERAGE net cost per place in a primary school started in 1945 *was* £195, *said Miss Florence Horsbrugh, Minister of Education, when she spoke of the school building programme in the House of Commons on March* 25. *By* 1950, *she said, it had gone down to* £158 *per place, and it would now be* £140 *per place. In secondary schools the figures were* £323, £276 *and* £240. *p.* 528

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THE GAP IN THE PUZZLE

WITH commendable persistence, as prompts marksmen at a funfair shooting-gallery to defy uncertain sights and challenge an elusive target, attempts are again being made to solve the problems of architectural education and qualification.

At a recent general meeting organised by the A.A. students, when the subject was debated in relation to that particular architectural school, the target and background were well riddled; the bull's-eye, however, remained unscathed, even though, as usual, those responsible for controlling the destinies of the A.A. and the R.I.B.A. did not fire a shot.

Last week it was announced that the R.I.B.A. had arranged for a joint sub-committee of the Schools and Examinations Committees of the Board of Architectural Education to be set up under the chairmanship of Mr. Donald McMorran to receive evidence and to report upon this important question; the result will be watched with keen interest. The issue is not a simple one. While the Board of Architectural Education sees to it that in qualification by examination a high common denominator is maintained, its policy is not to impose uniformity. The architectural schools show as great a diversity in their curricula, methods and in their ultimate aims as there is diversity in the types of job for which they are a preparation. One common problem, however, is how to bridge the gap between the time the student finishes his school course and the day he is able to pull his weight in an office.

The student of to-day does not differ greatly from his predecessors, for all that was said the other evening at the A.A., only perhaps in that in the early '20's it was in the Second Year that he came to worry about the divergent views of Lloyd Wright and Le Corbusier, while to-day he probably does so when still a sixteen-year-old schoolboy. In his training, however, greater importance than ever is now given to teaching him how to approach and to sort out any planning problem than to make him try to work out in full detail some complex building; how to tackle creatively any constructional problems than to encourage a facility in the preparation of busy sheets of conventional working drawings. The gap thus remains unbridged.

If the ex-student, on completing his course, although still a learner, is allowed to circulate without necessarily displaying as it were an L-plate, his busy employer may easily become impatient and critical. The R.I.B.A. has decided that qualification shall be deferred until a year has been spent in an office. This, however, will not provide the necessary experience if during that period he is only made to do what he can carry out efficiently. What he needs is twelve months on the drawing-board and on actual jobs under the active guidance of a Principal or experienced Assistant. For his act of faith the employer must count on reaping later benefit; if instead his protégé then moved elsewhere to widen his experience or take a job in one of the few offices that attract to-day as a magnet, he will feel that he should have been subsidised; but by whom is not clear. It is for the joint sub-committee of the R.I.B.A. to find the solution.

ECONOMY IN HOUSING

THE paper on Economy in Housing, read by Mr. Geoffrey Hopkinson to the annual meeting of the Shoreditch, Hackney and Highbury Housing Association at the R.I.B.A. on Monday, comes opportunely. The present time, when the Conservative Government is pledged to a substantial increase in the numbers of houses built by local authorities, sees the cost of housebuilding still increasing, and inevitably bound to rise still further as the cost of transport advances and the building wages sliding scale operates with higher living costs.

One means of keeping rents within the reach of the weekly wage-earner is to increase subsidies. This card the Govern-

ment has already played. How, it is being asked, will the further inevitable increase in capital cost be met? The opinion expressed by Mr. Hopkinson in his paper is that it can only be met by economies in construction methods and in roads and services, and by the introduction of a smaller house than the present standards permit. He believes that close consultation between the professional consultants and the builder can achieve much on the constructional side; from the planning aspect, he makes out a good case for the building of at least a proportion of houses below present Manual standards. His thesis, that if the lowest-paid worker is to be housed in homes of such a standard that he cannot afford them then the minimum wage should be raised to a level where he can, makes more sense than the present arrangement whereby houses are built to an arbitrary standard and the authorities then scratch their heads to see how the ever-widening gap between actual and economic rents can be bridged.

Collectively we are living beyond our means and, as Mr. Hopkinson states, this is true also of local housing authorities. To bring housing on to a realistic basis will need the help of every agency and means available; if this means a temporary recession for some houses from high post-war standards, then this must also be given objective consideration from a viewpoint that is not political but social and technical.

NOTES & NEWS

AUSTRALIA AND NEW TOWNS

BEFORE presenting the annual report (summarised on page 527) as chairman of Crawley Development Corporation, at Crawley last Saturday, Sir Thomas Bennett had some interesting things to say on his recent tour of Australia. Australians, he said, showed great interest in the new towns that are being built in Britain, which represented "one of the most advanced pieces of thought on housing in the world," and he himself believed that the adoption of the idea in that country would help to solve some of the very serious problems with which Australia is presented.

In Australia people were allowed to build just where they liked, which meant that they were building thinly not only over the continent, but thinly even in the building areas, and already people in Sydney and other large towns were faced with up to 1½ hours travelling to work each day. One of the troubles was that the cost of providing roads and services was divorced from that of building the houses, and thus a great burden was being created for the State authorities to carry. The system worked well enough in Australia's "settler" period, but it was becoming obvious that urban developments could not proceed without some planning, and that the services that grew up under unplanned conditions could never be paid for economically.

Sir Thomas likened Australia to a young man of 21, "with no feeling that life is difficult." The population from top to bottom had not yet got any clear idea that man has to work for his living, he said.

OXFORD GAS WORKS

WELCOME news for those engaged in the fight to preserve the amenities of our towns and countryside is contained in a statement issued on March 27 by the Southern Gas Board, which says that it is "the intention and fixed policy" of the Board to move altogether from the present site of the Oxford Gas Works, both north and south of the Thames, as soon as circumstances permit and present difficulties of removal and of the construction of new gas works elsewhere can be overcome.

The Board's hope is to cease to use the north works for gasmaking in the course of the present year, though it may be necessary to reserve the retort-house there as a standby for an emergency. It would be the Board's aim to vacate the north site within ten years. In the meantime the Board has no intention of enlarging the present installations.

THE SEVEN CHURCHES FUND

THE SEVEN CHURCHES campaign fund in the diocese of St. Albans now totals £30,030 in gifts and promises. Included in this figure is a sum of £15,000 promised by the William Johnston Yapp Charitable Trust. Recent gifts include one of £1,000, and another of £800 from an unknown donor.

The campaign aims at raising £75,000 to provide church buildings in seven of the new housing areas in the diocese. It is intended to start building this year a church at Adeyfield, the first neighbourhood unit to be developed in the New Town of Hemel Hempstead, and also at Oxhey Place, where the London County Council has put up houses for over 15,000 people. The architect for the church at Adeyfield is Mr. Felix J. Lander, F.R.I.B.A., who has collaborated with Mr. H. K. Ablett, F.R.I.B.A., chief architect to the Hemel Hempstead Development Corporation. The complete scheme comprises a church, church hall and vicarage, but for the time being work will be confined to the nave and sanctuary of the church, including the gallery at the west end and one room to be used as a vestry; it is hoped that it will not be long before the tower can be built, which will complete the church so far as its appearance from the square is concerned.

Buildings to be used as both churches and halls have been designed for the Bedwell neighbourhood of Stevenage New Town and the L.C.C. estates at Boreham Wood, and these also should be begun this year.

It is estimated that to serve adequately the new towns and housing estates in the diocese, 35 new churches will eventually be needed.

BUILDING SOCIETIES' LOANS

BORROWERS from at least one of the larger building societies have in the last few days received a notification to the effect that the society is to raise its interest rates on existing loans, as well as on new advances, from 4 to 4½ per cent. from July 1 next. Such a policy is in marked contrast to that of local authorities who have advanced money for house purchase under the Small Dwellings Acquisition Act, and who will continue to charge existing borrowers interest at the old rates.

CHURCH AT HEMEL HEMPSTEAD. A perspective drawing of the new church at Adeyfield, Hemel Hempstead New Town, which has been designed by Mr. F. J. Lander, FRIBA, with the co-operation of Mr. H. K. Ablett, FRIBA, chief architect to the Hemel Hempstead Development Corporation. (See note on the Seven Churches Fund.)

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Rates of interest chargeable on new mortgages must obviously follow the trend of the increased bank rate, but it is difficult to see how building societies can justify (we know, of course, of the clause in mortgages that legalises the practice) raising their interest rates on existing mortgages for which they have already found the capital. Such action may well induce people to turn to local authorities for their mortgages in the assurance that they will then be able to budget accurately for the years ahead.

THE ROYAL SCOTTISH ACADEMY

THE Royal Scottish Academy have elected as Associate Mr. Basil Spence, O.B.E., F.R.I.B.A., F.R.I.A.S.

A NEW TOWN IN SOUTH AFRICA

PROGRESS on the new town of Welkom, South Africa, is described in an article by Mr. Wm. O. Backhouse, M.T.P.I., Town and Regional Planning Consultant to Anglo-American Corporation of South Africa, Ltd., of Johannesburg, in the March issue of *Optima*, a quarterly review published by the Corporation. By the end of December last the population had grown from a handful, five years ago, to nearly 9,000 Europeans and about 10,000 non-Europeans; nearly 2,000 houses had been completed; more than 110 miles of roads had been formed and graded; and one-sixth of the shopping centre had been built or was under construction. In the native township, known as "Thabong," 650 houses had been completed. The rate of growth is such that in the current year Welkom is expected to become the second largest town in the Orange Free State.

The new town, which, under the instructions of Sir Ernest Oppenheimer, chairman of Anglo-American Corporation, was to be designed "in accordance with the most modern principles of town planning as determined by practice and experience in the world at large," will cover about 9,300 acres, and is to house a minimum population of some 40,000 Europeans and nearly an equal number of non-Europeans. It owes its existence to the discovery of new gold-fields, and is one of four new towns being developed around the mines in an effort to prevent the establishment of sprawling, uncoordinated cities as has usually occurred in mining areas in the past. Welkom itself is being built to serve a group of six mines in a compact block, five of which are owned by Anglo-American Corporation. The master plan provides for a spacious civic centre surrounded by a number of neighbourhood units, and a 530-acre industrial site, screened from residential areas by green belts.

DULWICH CHAPEL RESTORATION

THE 335-YEAR-OLD DULWICH COLLEGE CHAPEL, adjoining the "Old College," in the still rural Dulwich Village, is undergoing restoration. The ancient roof is in a bad state of decay and is being replaced. Modern central heating plant will be installed, and the whole building, inside and out, will be refurbished. The Chaplain's House, adjoining the chapel, was badly blitzed and will eventually be rebuilt. The scheme also provides for the erection of an elegant porch at the College-road entrance to the chapel.

Dedicated in 1616 by the Archbishop of Canterbury as the "Chapel of Christ, God's Gift," it was founded by Edward Alleyn, actor-manager, friend of Shakespeare and Lord of the Manor of Dulwich. In former days, it served as a chapel-of-ease for the Hamlet to the Mother Church of Camberwell, but in 1823, it was enlarged to its present size, by the addition of the south aisle and gallery. The tomb of Alleyn, the founder of the famous College and Chapel, may be seen in the choir.

Mr. F. Austin Vernon, F.R.I.B.A., is the architect for the work of restoration.

RESTORATION OF ASTON HALL

A SCHEME for repair work at Aston Hall, described as Birmingham's "most important architectural treasure" is being laid before the City Council; the estimated cost is £59,587. The committee submitting the plans point out that to rebuild the hall in the same style, if it were possible to do so, would cost about £250,000. The principal repair items are the restoration of the stonework and windows, copings, cornices, etc. It is proposed to use Hollington gritstone in place of the original Bromsgrove sandstone which cannot withstand the sooty and chemical-laden atmosphere of Birmingham. The roof will require to be stripped and sections of the towers and most of the gables will need to be rebuilt.

A TALK ON LETHABY

MR. JOHN BRANDON-JONES, A.R.I.B.A., will talk about the work and writing of W. R. Lethaby (1857-1931) at a meeting of the R.I.B.A. Library Group to be held on April 7.

PRIZE AWARDS

AT THE last meeting of the Liverpool Architectural Society it was announced that Mr. J. L. Berbiers, A.R.I.B.A., of Southport, had been awarded the William Unsworth Sketch Design Prize for this year. Mr. Berbiers' sketch was of a proposed entrance to the Dee Embankment, and it won for him the prize for the fourth time.

The T. E. Eccles Photography Prize was won by Mr. Hubert A. Hesketh, Deputy City Building Surveyor, Liverpool, for a photograph of the south portico of St. George's Hall.

COMING EVENTS

MONDAY, APRIL 7

R.I.B.A. (LIBRARY GROUP).—"W. R. Lethaby (1857–1931)," by Mr. John Brandon-Jones, A.R.I.B.A. 66, Portland-place, W.1. 6 p.m.

R.I.C.S.—"Mineral Valuations," by Mr. J. N. Roberts, F.R.I.C.S. 12, Great George-street, S.W.1. 5.30 p.m.

SOCIETY OF ENGINEERS.—"Wood Glueing in Industry," by Mr. K. A. Zandstra, A.M.I.E.E. Geological Society, Burlington House, W.1. 5.30 p.m.

TUESDAY, APRIL 8

R.I.B.A.—Exhibition of premiated and commended designs in the Golden-lane housing scheme competition. 66, Portland-place, W.1. 10 a.m.–7 p.m. Continuing open until April 10.

WEDNESDAY, APRIL 9

L.M.B.A. (CENTRAL AREA No. 1).—Luncheon, to be followed by showing of M.O.W. films. Derry and Toms' Restaurant, High-street, Kensington, W.8. 1 p.m.

ENGINEERS' GUILD (METROPOLITAN BRANCH).—Luncheon. Chez Auguste, 47, Frith-street, Soho, W.1. 1 p.m.

FRIDAY, APRIL 4

INSTITUTION OF MECHANICAL ENGINEERS.—Discussion on factory maintenance, by Mr. Max Bentham, M.Sc.I.M.E., Storey's Gate, S.W.1. 5.30 p.m.

"A Mr. Wren from the Building Research Station would be grateful for your recipe for batter pudding."

ARCHITECT'S APPOINTMENT

MR. THOMAS DIXON, L.R.I.B.A., has been appointed chief assistant architect to Dover Corporation. He was until recently assistant architect on the staff of Chatham Borough Council.

ARCHITECT'S ESTATE

MR. G. H. GRAYSON, F.R.I.B.A., of Great Milton, Oxfordshire, former president of Liverpool Architectural Society, left estate valued at £84,001.

PROFESSIONAL ANNOUNCEMENTS

MR. D. C. DENTON-SMITH, L.R.I.B.A., of 40, Regent-street, Cambridge, announces that, as from April 6, he is taking into partnership MR. NORMAN RUSSELL, A.R.I.B.A., and MISS MARY H. DAVEY, A.R.I.B.A., from which date the practice will be continued under the style of D. C. DENTON-SMITH AND PARTNERS, chartered architects and surveyors. Address and telephone numbers remain unchanged.

MESSRS. D. M. DOIG, CRONE AND SMITH, surveyors, announce that they have moved to new premises at 144, Wellington-street, Glasgow, C.2. Tel.: Douglas 3907-8-9.

MR. R. F. PEARCE, F.I.A.S., who is leaving the War Damage Commission on April 30, is going into partnership with MR. F. H. SNELL, F.I.A.S., of SNELL AND PARTNERS. The title of the firm will be changed to PEARCE AND SNELL, quantity surveyors, and will practise from 50, Lincoln's Inn Fields, W.C.2.

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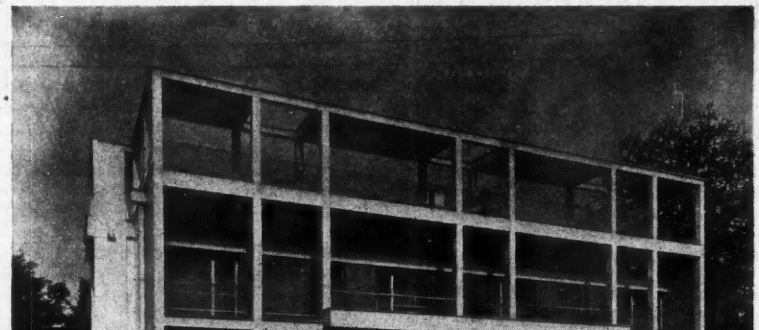
CONTEMPORARY ITALIAN ARCHITECTURE

Exhibition at the RIBA

Reviewed by E. G. ADAMS, ARIBA

LONDON is unusually fortunate at the moment in possessing two exhibitions devoted to the contemporary architecture of countries which have earned a high reputation for good design. After the refinement and unobtrusive taste of the Swedish exhibition at the Building Centre, this exhibition of contemporary Italian architecture at the R.I.B.A. may seem to have both the merits and defects of a more full-blooded and uncompromising approach to design. The exhibition covers a bewildering array of buildings, from the early 'thirties to the present day, and the majority of them are arrestingly vigorous, with a strong emphasis on form which sometimes seems crude and blatant by comparison with the greater subtlety and sensitiveness which has evolved in Scandinavian architecture. A true judgment is handicapped by the poor quality of the illustrations at this exhibition, by the absence of colour which must play so important a part, and by the difficulty of imagining the clarity and brilliance of the Italian atmosphere during a drizzling March afternoon in Portland-place.

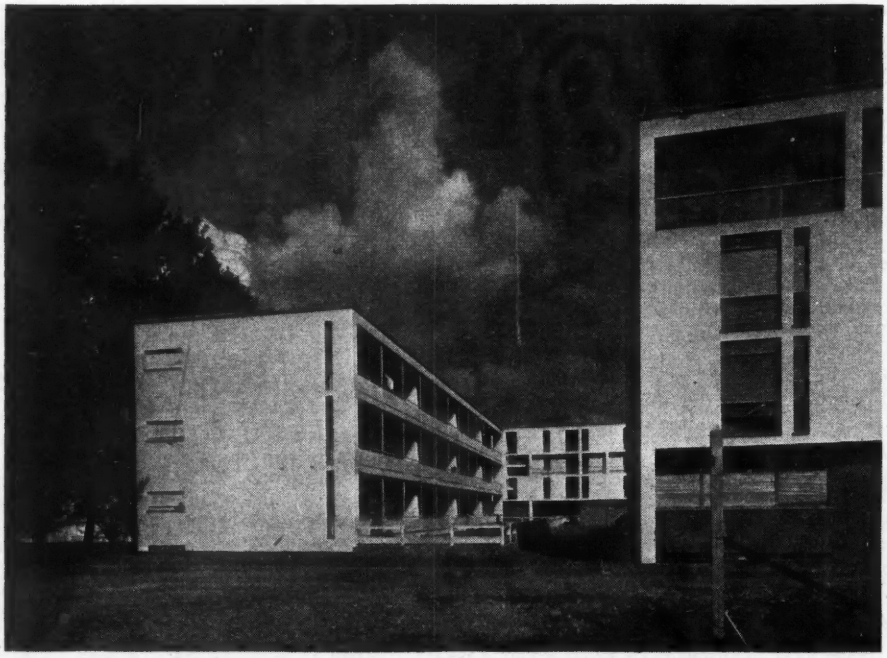
The pre-war buildings included in this exhibition have many high qualities and many are already well known. We can see that by quite early in the 'thirties, Italian display design was well ahead, as manifested in Franco Albini's I.N.A. Pavilion at the Milan Fair in 1935, with its airy use of glazing and simple and effective lettering. The same qualities are evident in Giancarlo Palanti's Parker Fountain Pen Shop, 1934, where the shop display has a background of abstract patterns framed on very light metal screens on slender tubular supports. This high standard is continued in the post-war period by such structures as B.B.P.R.'s U.S.A. Pavilion at the IX Milan Triennale, 1951, where a fascinating rhythm is set up by forming an eccentric circular courtyard within the circular pavilion.



VILLA IN GALLARATE (1946). *Luigi Ghidini and Guglielmo Mozzoni, architects.*

PREDOMINANCE OF FLATS

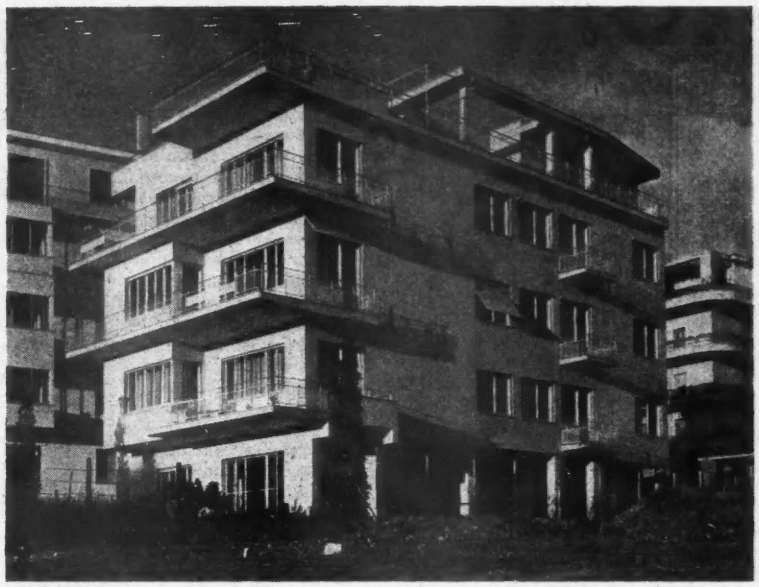
Multi-storey blocks of flats, usually for the wealthier classes, appear to dominate the architectural output both before and after the war. Giancarlo Palanti's flats in Milan, 1934, are an extremely successful early example where concrete framed balconies, with open metal railings, are grouped in the centre, flanked by plain brick walls punctured by a series of simple, well-proportioned windows. All these apartment schemes have generous planning, with long spacious balconies which form a prominent feature of the elevations. Typical of the many post-war luxury flat blocks illustrated in the exhibition are those in Milan, 1948, by Carlo Pagani and Vittoriano Vigano. This block has two tiers of splayed projecting balconies with solid concrete fronts and mesh panels on the splay. Social conscience has not allowed so much luxury building in this country, but on the other hand there are shown a number of Italian post-war schemes for working class housing which on the whole do not look very prepossessing. One of the best is at Ivrea, built for the employees of the Olivetti Company and designed by Marcello Nizzoli, 1950. There are long blocks of row-houses and flats, light-coloured and clean cut in shape, with a reasonably successful treatment of access balconies, with slender columns and open panels. On the same screen as this housing are the beautifully designed Olivetti typewriters.



TERRACE HOUSES for employees of the Olivetti Company, Ivrea (1950). *Marcello Nizzoli, architect, in collaboration with Annibale Fiocchi.*

Amongst the commercial buildings, the office block in Milan by Roberto Menghi and Marco Zanuso, 1948, is very competently designed with a strong vertical emphasis about the tall windows. This vertical emphasis is fairly common in modern Italian building and it can be very

disconcerting when combined, as it sometimes is, with an equally strong horizontal emphasis. This block, like most of the other multi-storey buildings, is constructed of reinforced concrete with rough panel fillings veneered over with marble. Marble, stucco, mosaic, faience and terrazzo are used as surface finishes and in their use Italian craftsmanship maintains a standard which has endured for centuries. It is regrettable that the exhibition says so little about methods of construction and finishes though the latter, judging from the photographs, appear to be at a consistently high level. On a large scale, the vast garage in Venice, designed by the Direzione Tecnica Immobiliare (Rome) begun in 1934 and continued in 1950, has the efficient and entirely nondescript character of a commercial building of its sort almost anywhere in the world, with long continuous strip windows with horizontal concrete bands in layers between them. On a much smaller scale the little AGIP gasolene station by Guiseppe Vaccaro, 1951, is an excellently simple design relying on the graceful form of its cantilevered canopy and on good lettering.

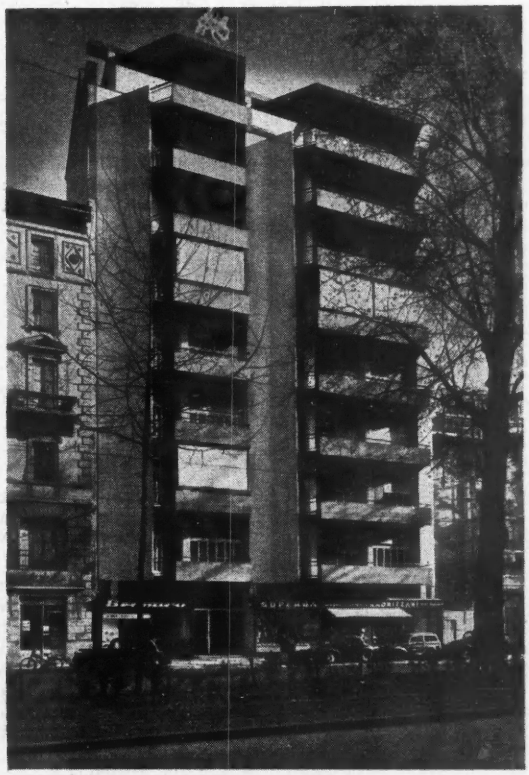


SIX-APARTMENT HOUSE in Rome (1948). *Luigi Piccinato, Silvio Radiconcini and Bruno Zevi, architects.*

THE MONUMENTAL TRADITION

Both the familiar Florence Railway Station, 1936, richly sheathed in marble, and the recent Rome Railway Station with its great concourse roof contorting like a snake and shooting out to form a canopy, display the monumental scale which has been handed down as part of the Italian tradition despite the adoption of functionalism. The same grandeur exists in the remarkable engineering structures by Pier Luigi Nervi, of Rome, such as the parabolic arches of the hangars built in 1936 and 1941 where an interlacing framework of concrete members, beneath the curved shell of the roof, comes to rest on a few isolated points of support; or one of the earliest buildings in a contemporary idiom in Italy, the Florence stadium, built by Nervi in 1932, which has a curved concrete roof flying out, above the stepped seating, with an exact and beautiful poise. P. L. Nervi collaborated with Carlo Daneri, of Genoa, in the extraordinary design for a boat-house, 1951, entered through a very elegantly curved reinforced concrete arch, shielded by sliding glazed screens.

Some of the most refined detailing in the exhibition appears in Guiseppe Vaccaro's Vacation Centre, on the sea shore near Rimini, 1947. The blocks of shops and dwellings in this scheme are distinguished by very carefully designed balconies and covered ways. The scheme includes a hotel with an eight-storey block supported on fork-shaped concrete frames.



FLATS IN MILAN (1948-9). *Carlo Pagani and Vittoriano Vigano.*

Of individual houses the exhibition contains several early essays showing Corbusier's influence, such as Figini and Pollini's houses of the early 'thirties in which the plain box-like form is emphasised by severe white rendering and strip windows. The Villa at Gallarate, 1946, by Luigi Ghidini and Guglielmo Mozzoni similarly depends entirely for its effect externally upon the pleasant proportions of its structural frame which is bluntly expressed on elevation. The week-end house by Giulio Minoletti, of Milan, on the shores of Lake Como, 1946, is beautifully detailed and skilfully related to its dramatic setting of water and wooded mountainside.

ABSENCE OF OVERALL PLANNING

Overall town planning schemes in Italy are apparently non-existent and the Italian architects are said to envy us our central planning powers. The exhibition does include several detached examples of site planning, such as the Q.T.8 Experimental Quarter built for the VII Triennale Exhibition of Milan, 1946–51, which comprises terrace houses, four-storey blocks and nine-storey blocks. From the broad view of architecture, on the neighbourhood unit scale, the exhibition ranges down to individual pieces of furniture, table lamps, radio sets and other examples of industrial design.

There is so much at this exhibition which is stimulating and provocative that more than one visit will probably be necessary. The layout is confusing and rather dull, and the catalogue so far incomplete, but unforeseeable delays have hindered its production. In spite of these disappointments, however, the exhibition does bring home to us an awareness of what is happening in Italy and will set the visitor dreaming of a modern pilgrimage to the land from which we and the rest of Europe have derived so much artistically in the past.

Research Applied to Current Building

3—Timber

By DEX HARRISON, Dipl.Arch., ARIBA, AMTPI

IT is, indeed, astonishing that the latest of the materials to which structural science is being applied should be timber, the oldest material in building. And yet that is the paradox. Structural science developed with steel and later with reinforced concrete, while timber, the traditional material, was almost completely neglected and superseded for any but the simplest of structures. We may now be said to be rediscovering timber, and enormous strides have been made since 1939 when the impetus of the war years put timber on the map, whilst the exigencies of the time compelled its economical use. Through the auspices of the Timber Development Association there is to-day a considerable literature on timber design and development.

Timber's supreme advantage lies in its innate flexual rigidity in relation to weight which, combined with reasonably high tensile and compressive characteristics, make it pre-eminently suited to conditions of lightly loaded large spans such as are very often met with in building, as in roof structures, domestic floors and partitions. In such conditions of use, its cost has always been more favourable than that of its rivals, and a reversal to timber, to the extent that it is available, will help to reduce building costs.

Even so, it is a rare and costly import and rule-of-thumb methods for its use can no longer be countenanced; "half the span plus an inch" is an example of the sort of attitude we must put behind us. In fact, if we are going into this business of substitution seriously, we all need to apply our minds equally as we have done with steel and reinforced concrete.

DESIGN FROM SIZE

Timber is available in stock scantling sizes, in 3 in. by 2 in., 4 in. by 2 in., 5 in. by 2 in., and so on, moving generally in multiples of half-inch thickness and one-inch depth, and design should be based upon these sizes, and not vice versa. This may seem a small point but, for example, the economic span of a 6 in. by 2 in. joist at 18 in. c.c. at 800 lb. f. and a loading of 36 lb. a foot super is 10 ft. 8in., and of a 7 in. by 2 in. joist at the same centres, 12 ft. 6 in. Since these centrings are maxima acceptable for 1 in. nominal floor boarding, it follows that any intermediate span will result in an uneconomic use of timber. Such uneconomic use due to the initial design of the house could mean a loss of 10,000 standards per annum on 300,000 houses and, since house design does not start from the basis of timber economy, it is logical to assume that an average of half this amount is available for saving; 5,000 standards is sufficient timber for 3,000 additional houses.

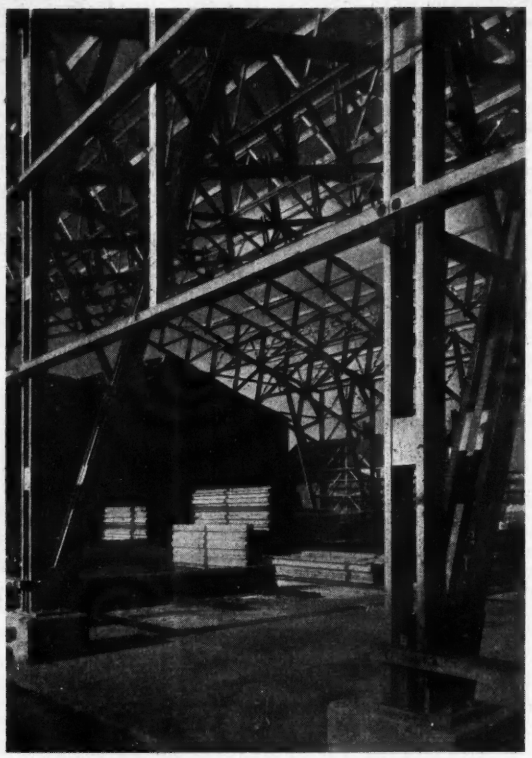


Fig. 7.—Storage shed at Shoreham, illustrating trusses showing extreme economy in timber built-up of small scantlings with metal connectors. This shed was erected at a cost of 11s. per ft. super, but, though economical in timber cube, the number of connectors required was above the optimum and the cost was therefore higher than it might otherwise have been.

It follows from the above that there are optimum spans for each condition of loading and optimum centres for each type of cladding, and a design fails to the extent that it diverges from these optima. The designer should start from the assumption that a more scrupulous use of the materials can be made in the basic plan. Tables for the use of timber which give the option of different scantlings spaced at varying centres according to load should be put in the salvage bin.

It is a well-known fact that timbers vary greatly in strength—even timbers of the same type—and, of the softwoods commonly used in structural work, three basic grades are recognised:

800 lb. per ft. sq. ..	Non-graded.
1,000 ,, ,, ..	Graded.
1,200 ,, ,, ..	Graded.

There is no widely accepted stress selection in timber practice in this country, and parcels of timber for general structural use will contain varying specimens, some bad and some good, making up the average. The assessment of this average results in the assumed reliable stress of 800 lb. f. Nevertheless, the average parcels will contain much timber capable of sustaining a higher stress than this, and this timber, therefore, is being uneconomically used.

A further point of stress grading would be to discourage the use of good timber in general casings, noggings and non-structural claddings, since the builder would be paying more for his graded material and would be offered a structurally inferior material at a cheaper rate which would be quite good enough for this use. The object of stress selection is to make the full economic use of the available timber by prior grading so that parcels of more uniform characteristics can be made up.

$x = \sqrt{Kbd^2}$ WHERE x = MAXIMUM SPAN IN INCHES FOR TIMBER JOISTS AND RAFTERS

GRADING	FLOORS 30 lb. super	FLOORS 40 lb. super	ROOFS: Flat up to 10 deg. and non-accessible 15 lb. super	ROOFS: Flat up to 10 deg. and non-accessible 15 lb. super	Accessible 30 lb. super
	1-in. boarding, joists at 20 in. centres, ½-in. plaster soffit	1-in. boarding, joists at 18 in. centres, ½-in. plaster soffit	Bitumen felting, 1-in. boarding, rafters at 24-in. centres, ½-in. plaster soffit	Bitumen felting, 2-in. Stramit-board, rafters 24-in. centres, painted soffits	¾-in. asphalt or similar, one layer felt or paper, 1-in. boarding, rafters at 20-in. centres, ½-in. plaster soffit
800 lb. f. ..	K = 213	K = 185	K = 288	K = 318	K = 177
1,000 lb. f. ..	267	232	362	400	222
1,200 lb. f. ..	320	278	436	478	266
	ROOFS, 10 deg. to 65 deg., with snow and wind load 15 lb./ft.² on plan				
GRADING ..	Interlocking tiles and battens, 8 lb./ft.² Paper or felt underlay. Rafters 24-in. centres. Minimum pitch, 30 deg.	Cedar shingles, 5-in. gauge rafters at 24-in. centres	Asbestos deep corrugated sheeting. Purlins at 4 ft. 6 in. centres, ½-in. insulation sheeting	Bitumen felt, 1-in. boarding or insulation sheet, rafters 24-in. centres	Copper sheeting, 1-in. boarding, rafters 24-in. centres, ½-in. insulation sheet
800 lb. f. ..	K = 277	K = 400	K = 141	K = 354	K = 354
1,000 lb. f. ..	348	500	178	445	445
1,200 lb. f. ..	417	600	213	533	533

NOTE.—When x results in a span more than 24 times the depth of the timber the deflection must be checked by calculation.

This would enable the designer to make a more shrewd assessment of his sizing and to design for given stresses which may be very much higher than have been usual. He might, for instance, elect to design his structure at a safe stress of 1,200 lb. f., thereby achieving a saving in cubic content, whereas, in the present system he is compelled to design at 800 lb. f. In more elaborate structures the designer can utilise stress grading by directing the higher stresses into chosen members and the lower stresses into subsidiary members and thus utilise each piece of timber at its maximum stress value.

STRESS-GRADED TIMBER

The figure of 800 lb. f. is admitted to be low. R. T. Walters says: "It has been found that most of the softwoods commercially selected for carcassing purposes in this country are at least as good as the 800 lb. f. grade laid down in B.S. 940, pts. I and II." If we assume that an average stress under stress grading of 1,100 lb. f. could be utilised, then on this basis a saving in timber content in 300,000 houses of 10,000 standards would be made. A further saving of 8,000 standards can be made by reducing the width of the joist scantling from 2 in. to 1½ in., and these two savings could between them result in a total saving of sufficient timber for 12,000 additional houses.

There is, of course, a fly in the ointment, for if one seeks stress-graded timber it will at present cost an extra £60 a standard, and this more than wipes out in cost the saving in bulk which will be made. Here is, frankly, a farcical situation and one which calls for rigorous governmental action for, as a country, we cannot afford to be so inefficient. It is pertinent to add that, in the United States, stress grading is normal accepted practice, even though they have their own unlimited supplies of timber and unlimited money.

The Achilles heel of built-up timber structures has always been the joint. Until the technique of jointing was solved, no improvement could be made in the mediæval forms which relied mainly on joints designed to be in compression. Recent developments in joint technique have been far-reaching and have opened up whole new fields of application. In the recent series of design studies published by the Timber Development Association many types of triangulated trusses spanning from 17 ft. to 57 ft. 6 in. are based on these techniques. Details are specially treated so that short and random lengths can be built up into the truss assemblies on the site. Stresses induced by the designs also enable 800 lb. f. quality scantlings from unsorted fifths to be used. Fig. 7 shows a structure built up of small scantlings.

Strict allowances must be made for tension and rupture at the joints even when using "bull-dog" or split-ring connectors. This type of connector has been used on a wide scale, and permits a much higher transference of tensile stress, and this effect is particularly marked in the smaller scantlings. For instance, two 2½-in. bolted split-ring connectors can be the equal of twenty-six ⅛-in. diameter wire nails.

On "span and profile" design there is an optimum, at which a more scientific arrangement of the timber available cannot but involve an increase in cost, due to the number and complexity of the connections. Even so, this increase is merely an incidental within an overall cost which is still much lower than that of steel, concrete or aluminium forms suitable for this type of building. Similarly, the use in the EJMA standard casements of a multi-laminated joint permitted the use of smaller sections than had been possible with the older mortice and tenon.

Modern developments in adhesives have given equally beneficial results, and frames can be built up entirely with glued joints. In addition, they have provided us with an entirely new medium of design in the field of laminated timber, and have made possible the use of stressed skin techniques in all their varied forms.

Laminating of timber can be used to gain two important advantages:

1. It will result in an averaging-out of defects, and this provides the possibility of allowing a higher stress in the laminated member.

2. The laminations can be arranged to provide the most efficient disposition of the materials in cross-section, enabling inferior timber to be used up in the more lightly stressed parts.

(Fig. 8 provides an example of this use.)

Generally, the costs of lamination will outweigh the advantages gained, although the result will be a saving of timber and may be worthwhile for this reason alone. For buildings of large span laminated beams, arches, etc., have a special significance since intermediate joints can be lapped in the laminations and a monolithic structure produced; and structures of this type, using high-grade timber, are a very worthwhile economic proposition. Such structures are, of course, the province of the skilled timber engineer. Virtually 100 per cent. efficiency can be achieved by the use of such techniques.

On factory work there is a lot to be said for timber at roof level, if it is used without a soffit and in factories where many "wet" processes submit steel to various forms of corrosion. In any case, the painting and maintenance costs are less. It is incumbent on the architect to ascertain the exact nature of the local bye-laws relating to the fireproofing of their particular building, and find out, where steel truss work would normally be used, if treated timber would satisfy his own conscience as well as the authority regulations. Timber can be treated with ALBI-R or other specifications of fire-retarding paint quite easily after erection, and spray techniques are both easy and reasonable in cost. In this country fire regulations have an important bearing on the freer use of timber. There are many types of structure in which timber could well be employed to a much greater extent than has been customary. Obvious examples that spring to mind are schools, churches, rural houses, and in fact any moderate sized building that is sufficiently isolated.

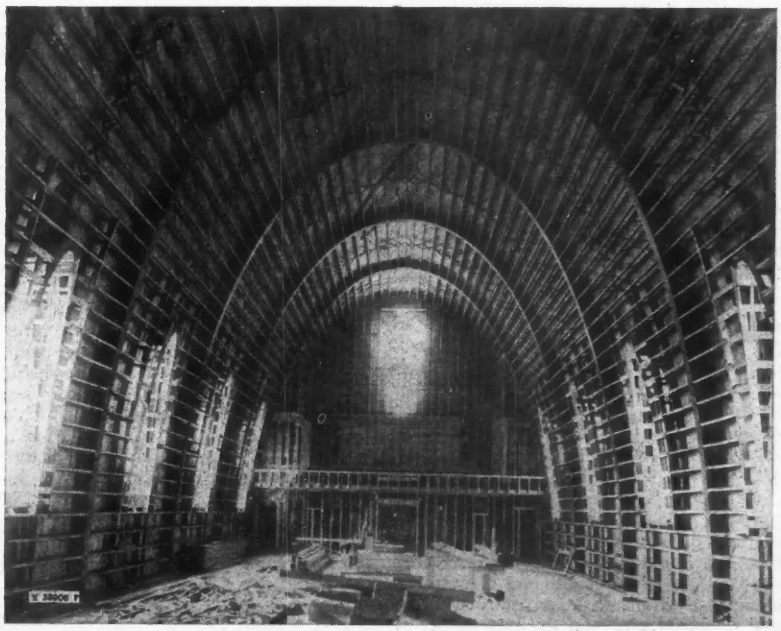


Fig. 8.—Church showing span of 42¾ ft., height 40 ft., spacing of glued laminated arches 14 ft., at St. Austin's Catholic Church, Minneapolis. (Copyright with: U.S. Department of Agriculture, Forest Department Madison 5, Wisconsin, U.S.A.)

*** The final article in this series—"Other Materials and Methods"—will appear next week. Previous articles were: (1) "Saving Steel" (March 21); (2) "Reinforced Concrete" (March 28).

Some notes on steel economy by the use of high-strength brickwork, prepared by the Ministry of Works, are on page 525.

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

THE INSTITUTE OF BUILDERS

To the Editor of *The Builder*

SIR,—I have read your leader of February 1, and I have noted the points you would like taken up by those responsible for the affairs of the Institute which, as you rightly suggest, is the natural authority on the subject of building education.

As a Fellow of the Institute I cannot escape some responsibility for any shortcomings it may have. Enormous strides have been made since the war in the provision of facilities for technical education both for craftsmen and managerial technicians in building. A great deal of the work of development has been done by members of the Institute working as individual builders on behalf of the industry and not directly on behalf of the Institute. Your challenge to the Institute should not be allowed to detract in any way from the industry's appreciation of this great work.

The Working Party Report placed the onus for adequate training on the employers' organisations, who look to the Institute of Builders as a potential co-ordinating body. If the Institute will only take the lead, they will find a large body of willing workers already in the field.

Your newspaper does not usually strike sparks in vain. It is to be hoped that something has been kindled.

NORMAN LONGLEY.

The Beeches, Crawley.

THE COST OF BUILDING

To the Editor of *The Builder*

SIR,—After reading the voluminous correspondence on the above-mentioned subject, dispersed with more than a sprinkling of graphs, percentages and other supposed relevant statistics, it was indeed a joy to read in *The Builder* for March 21 the letter from Mr. Rance who, by his qualifications, I imagine to be one of the singularly few builders who have written you on this subject. Quite obviously he has hit the nail on the head when he quotes the numerous causes for the grave situation with which we all, in the trade, are faced.

I would further stress the urgent need for architects and clients to make up their minds what they require in the first instance and to stick to this plan come what may; far too often are plans prepared which are altered not once but several times during the course of the work. Original plans are in many instances rushed to the quantity surveyors and a price is required in a time much too short for the contractor to obtain all the necessary quotations for the various materials. Further to this it has become more and more common for architects and surveyors to specify materials which are in very short supply or difficult to obtain, and it would obviously facilitate progress if specifications were got out to employ wherever possible the "easiest" materials. The report and suggestions of the Anglo-American team on this subject stress these facts, but in practice little or no consideration is given to them.

All the points made by Mr. Rance add up to one indisputable fact—the considerably increased cost of overheads to the contractor—and whilst we are all agreed that production by the operative is far short of pre-war standards this in itself is but a cog in the wheel of increased costs.

Until there is a marked improvement in the co-operation between all parties, including the Ministry of Works and its numerous statistical and form-filling departments, right through to the operatives on the jobs, building costs will continue to be high and ultimately there can only be one answer—lack of work and subsequent unemployment in the industry.

J. P. A. CLYMER.

"Appledore," Bernard-road,
Gorleston-on-Sea, Great Yarmouth.

To the Editor of *The Builder*

SIR,—The letter you have published in your newspaper for March 21, from Mr. C. A. Rance, of Maidstone, is most interesting.

We are especially interested in his penultimate paragraph, and would like to suggest that in all contracts there should be a clause to cover the builder against delays brought about by lack of details or by having to wait for detailed drawings at the convenience of the architect during the period of the working time of the contract.

Unfortunately, there are so many private architects working for public bodies and, since they become assistants, it is impossible for them properly to conduct the works and we would like to suggest that the Government or public authorities should take over these architects who find it necessary to go to them for work, as we think that such arrangements as exist at the moment are most unsatisfactory and almost entirely the reason for the many delays.

W. R. HERBERT.
[F. J. Moreton and Son, Ltd.]

171, Gipsy-road,
West Norwood, S.E.27.

A RETURN TO GOOD MANNERS?

To the Editor of *The Builder*

SIR,—The letter from the Director of the London Master Builders' Association in your last issue, commenting on your encouraging leading article of the previous week, touches on a matter of great moment, for it infers an urgent need for greatly improved standards of elementary courtesy and good manners.

It is very distressing that during the post-war years there has been such a marked deterioration at all levels of the common courtesy and civilities normal in the conduct of industrial and commercial affairs. Even in this age of mechanical and scientific progress, the importance of sustaining good human relations is still the world's most pressing current issue. The atmosphere and climate of an industry are conditioned so much by the collective recognition of the unlimited advantages to be gained from adopting a gracious and courteous approach and maintaining a genial good temper and humour in all industrial relationships and liaison. Without these easing qualities, mutual confidence is elusive and daily work becomes a matter of frequent conflict, irritation and frustration. Performance suffers and the cumulative result is a decrease in efficiency and inflation of costs and a lowering of living standards.

May I make so bold as to invite your kindly co-operation and influence in an earnest endeavour to re-establish throughout the building industry a spirit of greater responsibility, unison and concord based upon simple good manners, common courtesy and sincere mutual respect?

SPERO MELIORA.

R.I.B.A. FORM OF CONTRACT

To the Editor of *The Builder*

SIR,—On the subject of Practice Note No. 29 issued by the Joint Contracts Tribunal and reported in your issue of March 28, I would wish to defend the practice of inserting in the appendix to the R.I.B.A. standard form of contract a percentage limit of retention rather than a fixed amount, on the ground that:—

(*a*) The note that the limit shall not exceed 10 per cent. is sufficient indication that the basis of a percentage is acceptable to the parties—or, at least, was so at the time of the introduction of the form.

(*b*) There is no difference, in effect, between the insertion of a fixed sum and the insertion of a percentage figure which is to be calculated on a fixed sum. To give the employer the benefit of the maximum limit of retention permitted by the contract it would be necessary for the architect or surveyor to know, at the time of preparation of the bills of quantities, the amount of the lowest tender, since the Standard Method of Measurement (which is referred to in clause 10 of the Conditions of Contract) requires that the particulars to be inserted in the appendix shall be given in the bills.

(*c*) The Tribunal does not indicate the procedure to be followed in the event of the insertion of a fixed sum based on the architect's preliminary estimate which, owing to a cut figure (or inaccurate estimating), is found to exceed the 10 per cent. limit.

To avoid the last-named possibility any fixed sum inserted cannot exceed 10 per cent. of the lowest tender which can possibly be contemplated.

Is this not a shrewd effort, on the part of the contractors' side of the Joint Tribunal, to encourage revelation of the amount of the preliminary estimate, or, alternatively, to effect a reduction in the limit of retention.?

M. F. CLIFT [A.R.I.C.S.],
Chartered Quantity Surveyor.

3, All Saints-court,
Corn-street, Bristol 1.

(*Correspondence continued on page* 521)

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View of main entrance in Bedford-street South and elevation to Cambridge-street.

CIVIC DESIGN BUILDING, UNIVERSITY OF LIVERPOOL

GORDON STEPHENSON, FRIBA, MTPI, ARCHITECT

NORMAN KINGHAM, ARIBA, ASSISTANT ARCHITECT

THE new building for the Department of Civic Design, the School of Architecture, is the first permanent structure to be completed under the post-war development scheme of the University of Liverpool. The site is at the junction of Bedford-street South and Cambridge-street, and was formerly occupied by houses which were destroyed by bombing. In the development plan prepared for the University Development Committee by Professor W. G. Holford, F.R.I.B.A., the block containing the new building will eventually be occupied entirely by the Institute of Mathematics. The future use has been taken into account and internal partitions could be rearranged during a vacation.

The design of the building had to satisfy two main requirements in addition to the provision of adequate accommodation for the department. First, it had to be built economically, at a cost not exceeding 4s. 6d. per cu. ft. It is, therefore, simple in structural arrangement and the finishes, though robust, are inexpensive. Secondly, it had to harmonise with its surroundings and at the same time provide a starting point for a very much larger building which is not yet designed and may not be for another 20 years.

Construction.—The building is entirely steel framed and, except where it carries the external walls, the steelwork is not covered by concrete. The east and west walls of the building, containing the main windows, are supported on cantilevers at floor levels. The columns are clear of the windows. Blinds and curtains move in the space between columns and windows. All the external walls are of 9 in. brickwork in Flemish bond, lined internally with flame-proof medium hardboard on battens. Internal partitions are, in general, of 'stud construction covered in medium hardboard. Roof and floors of the main block are in precast reinforced concrete units resting on the steel beams.

Ground floor.—The ground floor contains the rooms which may be used by other departments of the University and the visiting public. The stair to the upper floors leads from a spacious entrance hall. From this hall there are doors leading to a lecture room containing 100 seats. At the platform end virtually the whole wall is covered by a glass blackboard lit by fluorescent lights concealed in the ceiling. A large glass-beaded screen, concealed in the ceiling, is easily unrolled, when required, by the release of a cord. Two lanterns are in a projection room cut off from the lecture room by a sliding hatch.

Artificial lighting in the lecture room comes from numerous shielded light fittings directed towards the seating. This lighting can be left on during a lantern lecture. General illumination can be provided from similar fittings directed towards the ceiling. Clerestory windows admit daylight to the lecture room, which can quickly be blacked out by blinds.

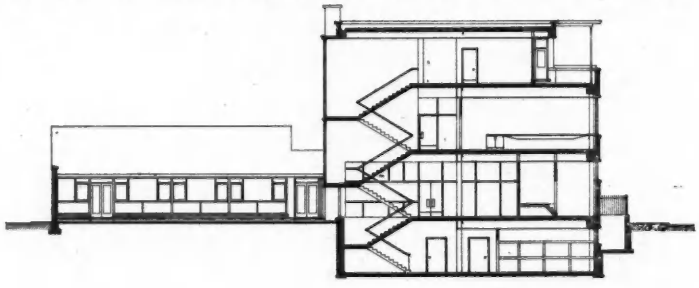
On the other side of the entrance hall is the criticism room. In this the windows are at clerestory level to

Part of the garden court at the rear of the building. The sculpture is by Mrs. Mitzi Cunliffe.

allow drawings to be hung on the outer walls as well as the inner ones. One end wall has reflector lights above it. It may be used for large maps stretching from floor to ceiling, and all or part of it may be spotlighted.

The exhibition hall is opposite the main entrance. The southern wall is in glass with low overhanging eaves above it. It looks on to the garden courtyard which provides a setting for a marble carving by Mrs. Mitzi Cunliffe. From the eaves an expanse of clear ceiling rises over portal trusses to the north light which provides the main daylighting to the room.

First floor.—Students of the Department of Civic Design work in the three rooms on the first floor. The studio, almost 80 ft. long and 27 ft. deep, is designed for a maximum number of 40. The library and seminar room are *en suite*, entered from either end of the studio or from the landing hall. The pattern formed by the ceiling and the lighting fixtures carries across the partitions which are glazed at clerestory level. The studio has one large window, stretching from end wall to end wall and from the ceiling to a wide terrazzo cill at bench height. It faces east and the daylighting is controlled by venetian blinds. The desks, or benches, are a special feature in the room. They are table tops 6 ft. wide and 17 ft. long, which span between large plan-chests of special construction and the steel channels supporting the window cills. There are no legs. Each table top rests on two trusses built in timber with ply-



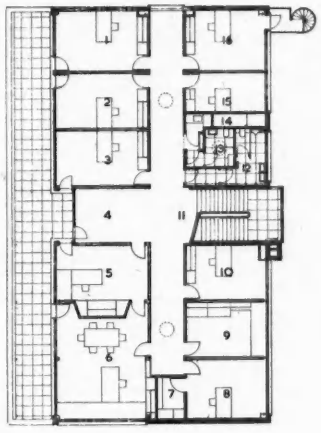
CROSS SECTION

wood webs. The benches were designed by Messrs. Russell and Goodden from sketches prepared by the architect. The extensive tops of the fixed tables allow students to work together on large maps and drawings or on individual drawings on their own boards. The tops of the tables are covered with battleship lino which provides a good working surface. The artificial lighting was considered in the same way, and after consultation with Mr. Paul Boissevain it was concluded that fixed light fittings with school-type reflectors would give maximum flexibility.

The library has an alcove containing the slide cabinets. The back wall has built-in bookcases to clerestory height with space for portfolios at the lower level.

The seminar room is for general use. It contains a wall blackboard, a built-in cupboard with a subdivision for each student, and a fitting containing a sink.

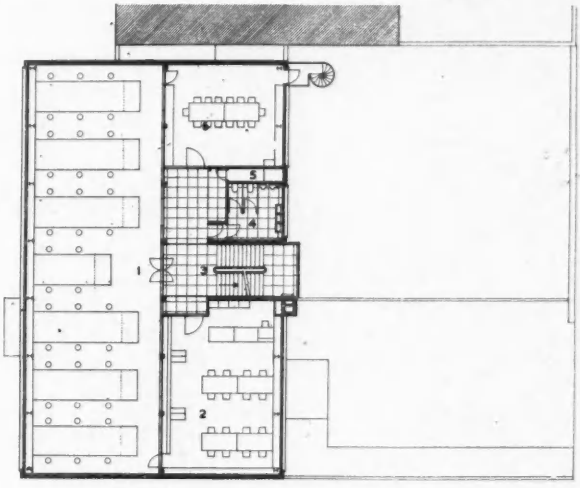
Second floor.—The staff rooms are on the top floor and are, in effect, a suite of offices. Those on the eastern front face a roof terrace and those on the other side overlook the garden court. At the head of the stairs is a space which will be used for waiting and also as a meeting point



SECOND FLOOR PLAN

KEY TO SECOND-FLOOR PLAN

1-3 Staff rooms
4 Waiting space
5 Secretary's office
6 Professor's room
7 Store
8 Senior lecturer's room
9 Editorial room for town planning review
10 Staff room
11 Landing
12, 13 Staff lavatories
14 Duct
15, 16 Staff rooms



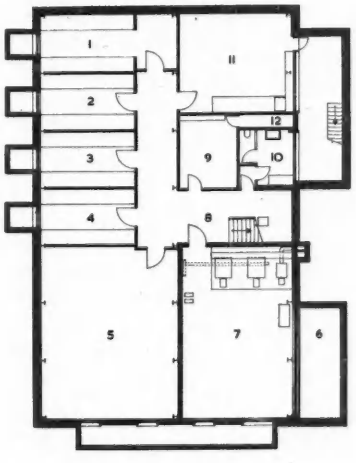
FIRST FLOOR PLAN

KEY TO FIRST-FLOOR PLAN

1 Studio
2 Library
3 Landing
4 Men's lavatory
5 Duct
6 Seminar room

KEY TO BASEMENT PLAN

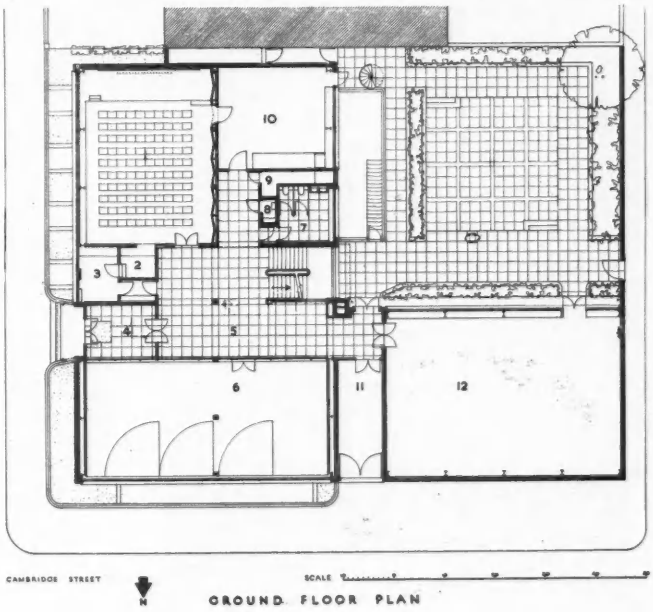
1-5 Stores
6 Oil fuel tank
7 Heating chamber
8 Landing
9 Electric equipment and store
10 Cleaners' room
11 Workshop
12 Duct



BASEMENT PLAN

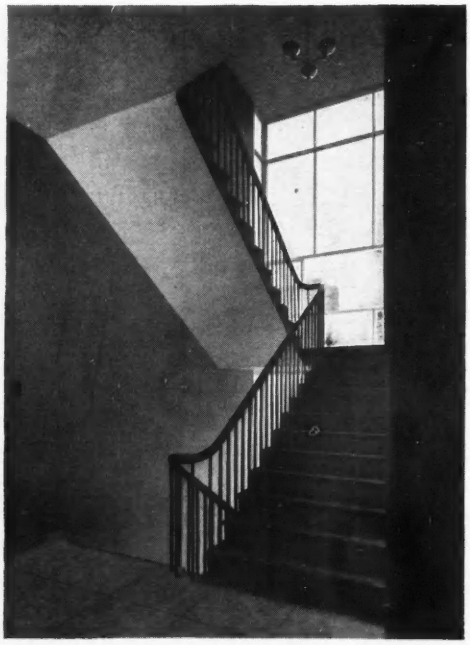
KEY TO GROUND-FLOOR PLAN

1 Lecture theatre
2 Projection room
3 Porter
4 Vestibule
5 Entrance hall
6 Criticism room
7 Women's lavatories
8 Public telephone
9 Duct
10 Modelling shop
11 Store room
12 Exhibition hall



GROUND FLOOR PLAN

The entrance hall, looking towards the exhibition hall and the staircase. Below : Detail of the staircase from the first-floor landing.



for members of staff. The entrance to the secretary's room is off the waiting space and beyond it, in the corner of the building, is the professor's room which serves both as office and conference room. The senior lecturer's room is adjacent to the professor's and next to it is an editorial room.

Internal finish.—The entrance hall, corridor and stair walls are painted in two shades of grey. The ceilings in the building are formed by 2 ft. square panels of insulating board with secret slots in which are aluminium T rails suspended from the precast floors. All the ceilings are painted white. The floor finish of the entrance hall and the staircase is in a light pink terrazzo. All the other floors in the building, with the exception of the lavatories, are in polished wood composition blocks laid in basket pattern.

Services.—The heating system in the building is fed by two oil-fired boilers, automatically controlled and operated by electricity. All horizontal runs of electrical and telephone conduit are in the space between floor and ceiling, and access panels, each 2 ft. square, are provided at all junction boxes.

The general contractors were Messrs. Wm. Tomkinson and Sons, Ltd., the clerk of works being Mr. Russell Folk, and the general foreman, Mr. Robert Jones.

The contract price was £57,009, excluding movable furniture but including built-in furniture, all fittings and garden layout. Following is a list of sub-contractors :

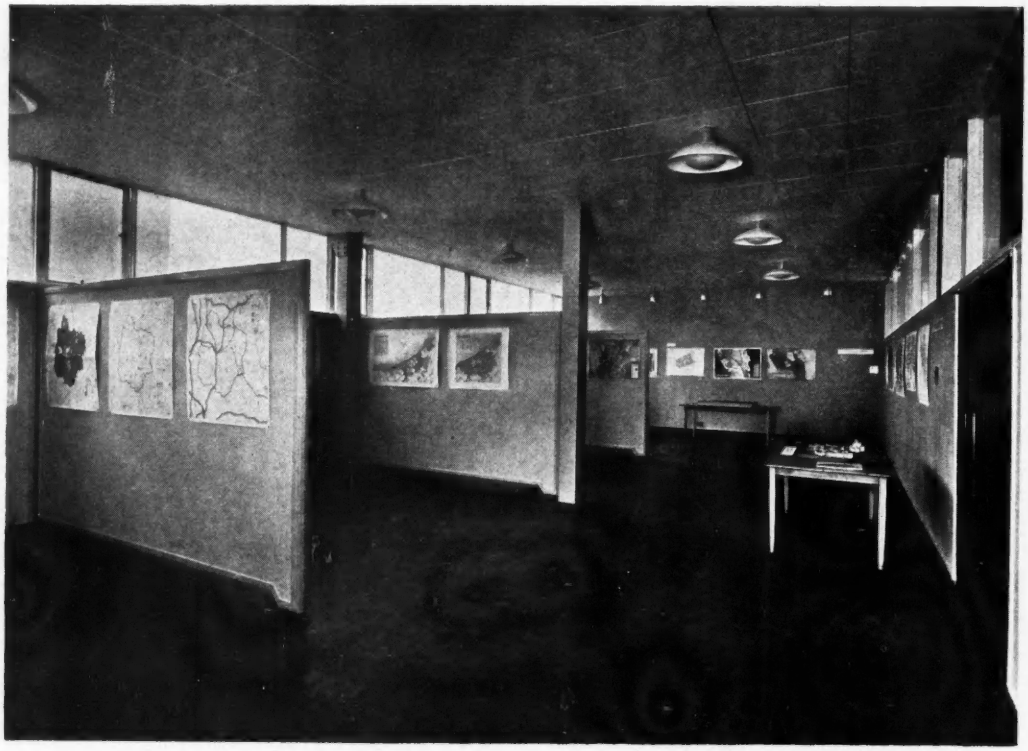
Sub-contractors for the structure.—Excavation, reinforced concrete, foundation bricks and partitions, Wm. Tomkinson and Sons, Ltd. ; dampcourses, special roofings and roofing

View from the main entrance doorway. The sculpture on the far wall is by Mrs. Mitzi Cunliffe. It is placed to attract the eye so that the full width of the site is appreciated on entering the building.

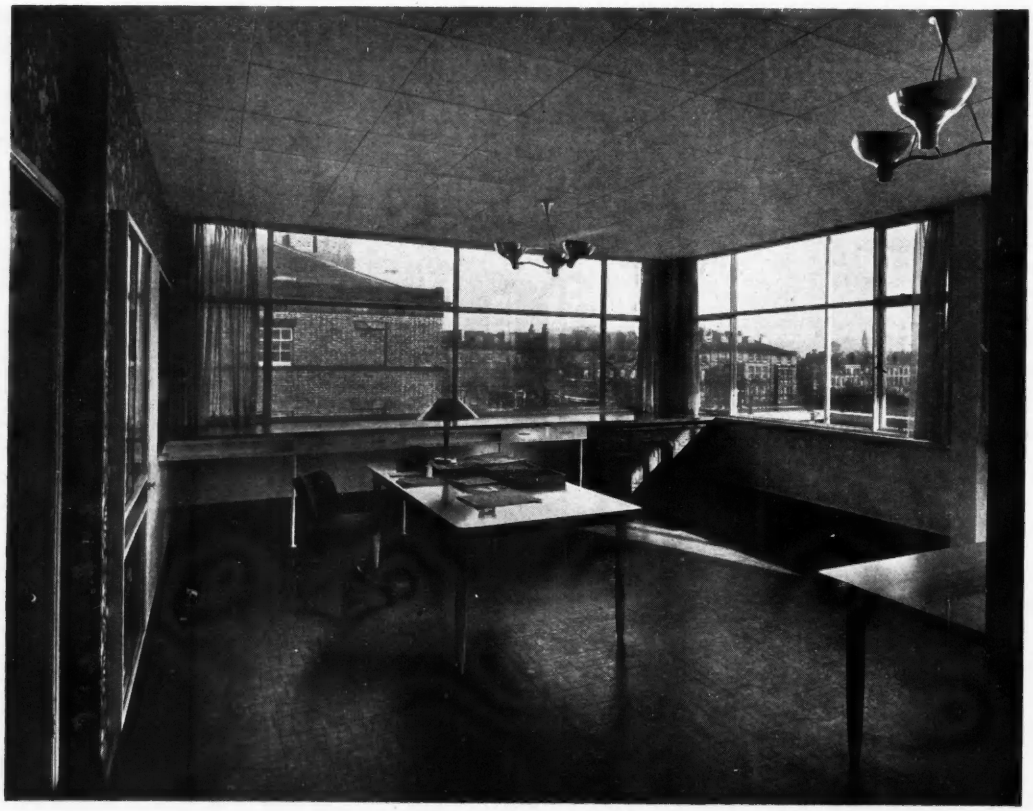
felt, William Briggs and Sons, Ltd. ; artificial stone, Pearson Bros. and Campbell, Ltd. ; structural steel, Redpath Brown and Co., Ltd. ; hardwood windows, William Thornton and Sons, Ltd. ; glass, Hill Lambert and Co. ; patent glazing, Williams and Williams, Ltd. ; patent flooring, Conways (Tiles and Terrazzo), Ltd., and Granwood Flooring Co., Ltd.

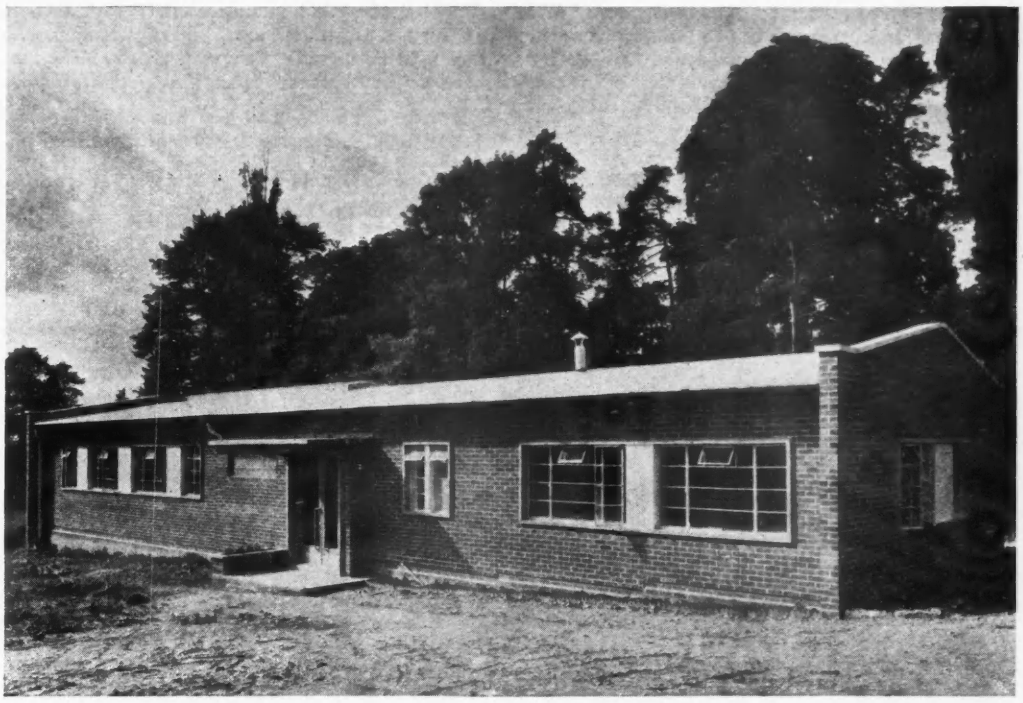
Sub-contractors for the equipment.—Central heating, Granwood Flooring Co., Ltd. ; electric wiring and bells, Merseyside and North Wales Electricity Board ; electric light fixtures, Merchant Adventurers, Ltd. ; plumbing, Merseyside Plumbing Co., Ltd. ; sanitary fittings, Musgraves (Liverpool), Ltd.; stairtreads, Conways (Tiles and Terrazzo), Ltd. ; door and window furniture, Chubb and Sons Lock and Safe Co., Ltd. casements, Wm. Thornton and Sons, Ltd. ; telephones G.P.O. ; iron staircases, Quiggin Bros., Ltd. ; venetian blinds, J. Avery and Co., Ltd.

Sub-contractors for decoration and specialities.—Plaster joinery, Wm. Tomkinson and Sons, Ltd. ; decorative plaster and wallpapers, Decorators, Ltd. ; metalwork, J. R. Pearson (Birmingham), Ltd. ; tiling, Conways (Tiles and Terrazzo), Ltd. ; furniture, Scottish Furniture Manufacturers, Ltd., Russell Furnishings, Ltd., and Race Furniture, Ltd. ; garden furniture, Race Furniture, Ltd. ; shrubs and trees, Bees, Ltd.; clocks, Merseyside and North Wales Electricity Board.



CIVIC DESIGN BUILDING : The criticism room. Below : The room for the Head of the Department.





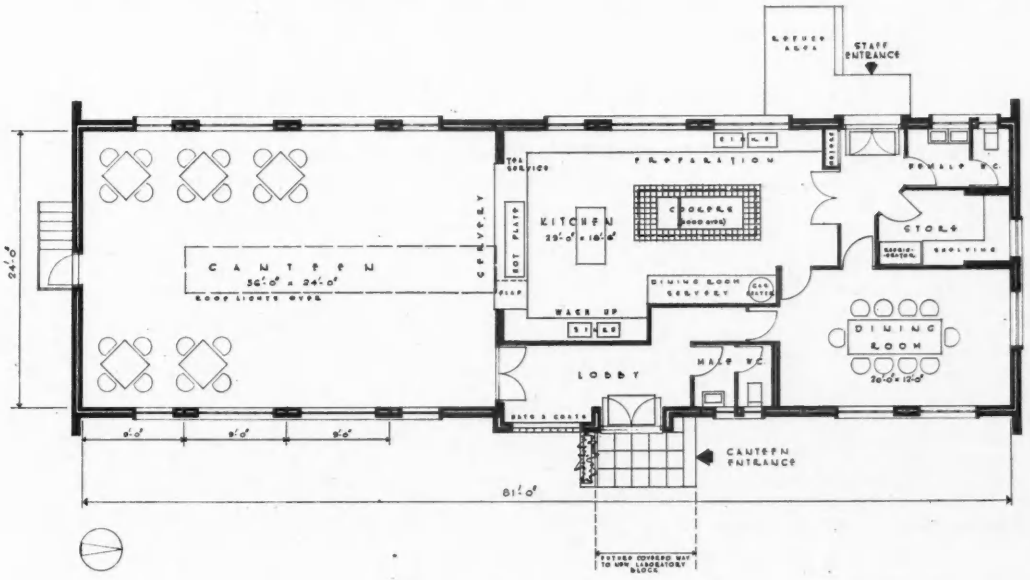
Exterior view of canteen.

AN INDUSTRIAL CANTEEN, STOKE POGES, BUCKS

A. F. HARE AND PARTNERS, ARIBA, ARCHITECTS

THIS canteen for the Fulmer Research Institute is planned for the use of the employees on a self-service basis. It will also provide social and lecture-room facilities, and the disposition of the canteen and amenities has been planned to allow for this dual function. The complete project, of which this canteen is a part, comprises a series of standardised single-storey buildings, each a self-contained specialist laboratory and each connected to a two-storey general laboratory and administrative block. The canteen comprises the first bay.

As the use of these laboratories may be varied,



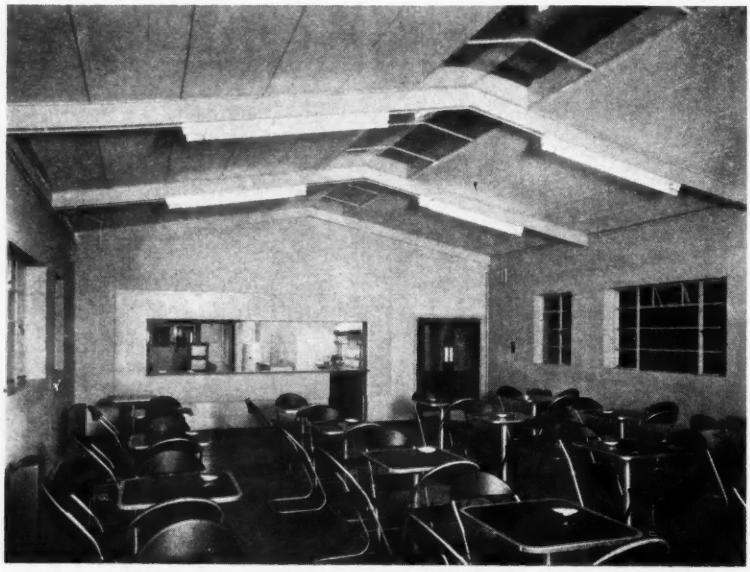
Canteen plan.

complete flexibility is required. Any one or more of the various laboratories can be built as the second or third stage development, and length variations or extensions can be built in multiples of 9 ft. A 3 ft. module in both directions was adopted to suit a standardised partition panel and unit fitments which would all be interchangeable.

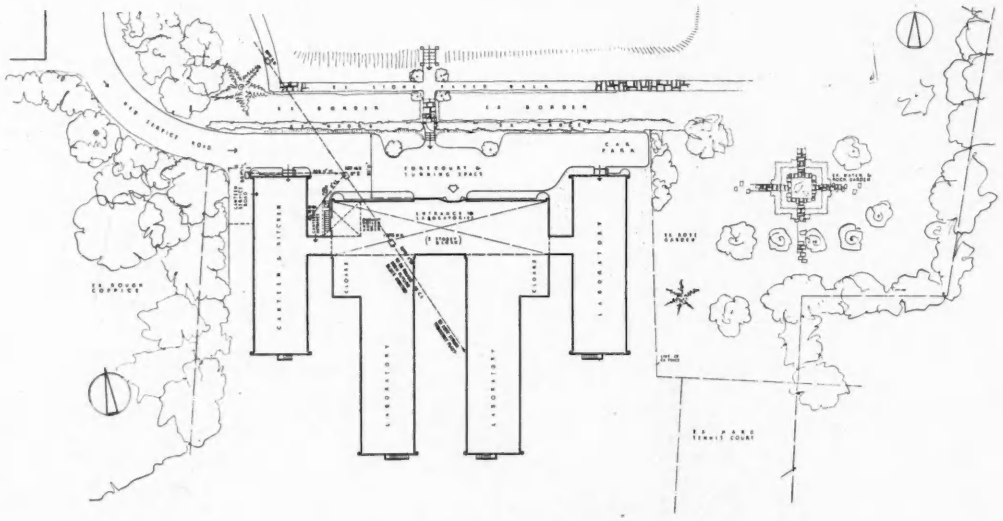
Construction.—The structure is an S.M.D. "Alframe" building, with portal frames at 9 ft. centres. The portal frames are of aluminium alloy extruded hollow box-section, 6 in. by 3 in., the rafters being exposed below the low pitch roof. The cavity walls comprise a brick outer skin with 3 in. inner leaf of lightweight insulation blocks with a conductivity "U" of 0.21 B.T.U.s/sq. ft./deg. F. hr. The roof consists of 2 in. "Stramit" boards supported on aluminium tee section purlins and surfaced with bituminous built-up roofing, with roof light of curved "Perspex" sheets. The metal windows have precast concrete surrounds.

Internal Finishes.—Floor, synthetic wood blocks; walls generally, distempered dove grey with reflective areas yellow; doors, painted maroon and rafters painted pale blue. Cills and surround to servery in pale blue mottled tiles.

The general contractors were Messrs. William Hartley and Sons, and the sub-contractors were: Structural and Mechanical Development Engineers, Ltd.; Thermalite, Ltd.; Stramit Boards, Ltd.; Granwood Flooring Co., Ltd.; Carter and Co., Ltd.; and North Thames Gas Board.



Interior view.



Site plan, showing eventual development.

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CORRESPONDENCE

(*continued from page* 512)

DETERRENTS TO HOME-OWNERSHIP

To the Editor of *The Builder*

SIR,—Mr. Robert W. Porter's article in your issue of March 28, on "Costs, Subsidies and the Housing Programme," drawing attention to existing deterrents to home-ownership, is indeed timely and gives much food for serious thought.

The basis of property revaluation set out in the Local Government Act, 1948, constitutes a further deterrent to home-ownership. Under this Act, rate assessments are heavily weighted against privately owned houses. And, as water rates are based on rateable values, private houses will bear higher water rates, as well as higher general rates, than council houses of similar size.

The assessment of council houses built after 1919 is calculated on 1938 site *costs*, whereas private houses are to be assessed on 1949 site *values*. Since 1938, inflation has greatly increased the nominal values of sites. Consequently, private houses built after 1919, assessed on inflated (due to the fall in the value of money) 1949 values, will bear heavier rates than council houses of similar type.

In present circumstances, as the dice are loaded so heavily in favour of council houses, it is simply not worth while to become the owner of a newly built house, especially in view of the extra burdens of Schedule "A" (Property) Tax and the increasing repair and maintenance bills which now have to be faced, in addition to the normal hazards of home-ownership.

In order to alleviate hardship, could not Exchequer "house-purchase grants" be made to purchasers of new privately built houses, similar to those granted after the 1914-18 war under the Housing Act, 1923 ?

Also, could not the Local Government Act, 1948, be amended to give justice to occupiers of private houses built after 1919 ?

R. J. WEBSTER, Member,
Building Societies Institute.

183, Central Park-road,
East Ham, E.6.

CROSS-WALL CONSTRUCTION

To the Editor of *The Builder*

SIR,—I was very interested in the article on cross-wall construction in your last issue, but is it so completely new ?

In most of the pre-war terrace houses in Holland the floor and roof loads are carried on the party walls. The roofs consist of purlins with tongued and grooved boards fixed on top instead of rafters.

The purlins must, of course, be placed closer together, but it will be found that if it is intended to cover the roof with boarding, the timber content will be reduced by omitting the rafters. The same argument would apply if the roof were covered with wood wool slabs.

In Holland the roof-space is usually either a bedroom or box-room so the purlins and boarding are wrought to provide a finish to the soffit.

TIMMERMAN.

QUALIFICATIONS OF CLERKS OF WORKS

To the Editor of *The Builder*

SIR,—I wish to refer to the final paragraph in a letter to *The Builder* of March 21, from Mr. F. H. Gregory, relating to the admission of members by the Institute of Clerks of Works.

Mr. Gregory says that we grant membership "on a written examination only." That is not so. There are two examinations; in both the candidates provide written answers and are examined orally and at the materials tables. Men who pass the preliminary examination are not awarded a diploma and are eligible for election as associate members only. Nearly all have had supervisory experience of some kind but this examination is regarded by the Institute as being preparatory to sitting for the final by those who feel equal to doing so.

Candidates taking the final must be over 28 years of age; very few are under 30, some are over 40, and the average age is 35. They *must* have had satisfactory experience as site supervisors. The majority are clerks of works, the remainder are general foremen or men in similar supervisory posts. We attach a lot of importance to this condition. By answers to appropriate questions, written and oral, a candidate's ability and practical technical knowledge can be assessed. The personal factor of relationship with men above, equal to, and below in status is another matter. Examiners can value this to a certain extent but they also require evidence of actual site supervision before accepting applications to sit for a diploma.

Men who pass the final are awarded a diploma, but only if they are in employment as clerks of works are they eligible for election to full membership.

I hope that this explanation will remove any uneasiness which Mr. Gregory and the members of his Federation may have respecting the Institute's method of admitting men to membership.

W. J. GIBBINS,
General Secretary,
Institute of Clerks of Works.

5, Broughton-road,
Thornton Heath, Surrey.

SALARIES OF CLERKS OF WORKS

To the Editor of *The Builder*

SIR,—Your correspondent, Mr. F. H. Gregory, comments [*The Builder*, March 21] on young men who have passed written examinations, and are led to believe they are fully fledged clerks of works. In my opinion the young men who pass examinations are less gullible, and have the wit to realise that with the constant change in methods and materials, no clerk of works becomes fully fledged this side of the grave, when cases are re-examined on their merits. In a lesser degree this applies to general foremen.

As one with long and bitter experience of unqualified persons masquerading as clerks of works, I must state that I prefer the man who has passed an examination to the one who offers a minimum weekly wage of £10 10s. as a qualification. That there is a strong body of opinion in agreement with this is shown by the recent announcement that this year the examinations of the Institute of Clerks of Works are to be held jointly at the R.I.B.A., London, and the chambers of the R.I.A.S., Edinburgh, with both bodies providing examiners.

This is a constructive step toward raising the status of the clerk of works, and, allied to the policy of registration, is the best counter to those local authorities, who, by offering inadequate salaries, allow a leakage of unqualified persons into the profession.

D. B. REILLY,
Clerk of Works.

27, Colinton Mains-cres.
Edinburgh, 13.

To the Editor of *The Builder*

SIR,—I was very pleased to read the letter sent by the General Secretary of the Institute of Clerks of Works to Ealing Borough Council (your issue of March 14) protesting against the small salary offered for a clerk of works; he has raised a matter which ought to be brought out into the open, both for the benefit of present clerks of works and for those who aspire to this profession. I know for a fact that there are eligible young men who are hesitant at taking to this profession because the remuneration is insufficient; they can earn more by working at the bench.

Also, the letter from the secretary of the National Federation of Clerks of Works calls for comment. His remark that a written examination does not make a fully fledged clerk of works will be disputed by none, but it does give a young man that authority to make a start. After all, a beginning has to be made in every calling and what better grounding in the practical side of the profession can a man have than to be employed by a local authority on a small housing scheme ? Having passed his written examination proves that he has given time to study and has a knowledge of building construction, mathematics, etc. The salary offered to him must, however, be sufficient to persuade him to lay aside his tools and to give him a fair status and remuneration for the money he has laid out in study and preparation, and will have to continue to lay out.

These low salaries which are offered will not entice young men who have passed their examination, but they will entice those who are too lazy to study and prepare, and hope to get the post by their ability to talk and parade their so-called knowledge. I am not suggesting by this remark that clerks of works who have not passed any examination are thereby less than fully qualified; far from it. But I am suggesting that there are those in the building trade who see in this profession an opportunity to get in on what looks to the uninitiated like a "cushy" job. It is to protect the trade from such men as these that the proposed clerks of works registration act is being negotiated.

D. B. SANT.

10, King's-crescent,
Middlewich, Cheshire.

ECONOMY IN HOUSING

Mr. Geoffrey Hopkinson's Eight Points

THE maximum individual effort by each member of the building team—architect, engineer, quantity surveyor, builder and operatives—as the only way to solve the housing problem was emphasised by Mr. Geoffrey Hopkinson, B.Arch.(L'pool), A.R.I.B.A., A.M.T.P.I. (chief assistant architect, Bracknell New Town), in an address on "Economy in Housing," given at a meeting of the Shoreditch, Hackney and Highbury Housing Association, Ltd., held at the R.I.B.A. on March 31. The chair was taken by Mr. Ian M. Leslie, J.P. Hon. A.R.I.B.A. Mr. Hopkinson was the joint winner with Mr. J. Lewis Womersley, A.R.I.B.A., A.M.T.P.I., of the Low-Cost Housing Competition organised by *The Builder* last year. In the course of his address, MR. HOPKINSON said:

I propose to examine this problem under five main heads as follows: (1) the planning of the house; (2) the construction of the house; (3) the materials used; (4) the siting and layout of houses; and (5) site works, roads, sewers and services.

Before doing so, however, I propose to comment briefly on organisation. The building industry is an extremely complex affair, embracing a wide variety of trades and including a host of manufacturers and suppliers. I am not competent to make proposals concerning the reorganisation of the many industries associated with building, nor of the building industry itself. I will merely comment that to anyone connected with the building of houses there appears to be much room for economy in the methods of manufacture and supply of materials and in the actual building operations. When the problem of effecting economies is examined, people seem invariably to look to the architect and say "You must replan your houses so as to make them cheaper," yet at the same time they insist on certain standards which cost more than they are prepared to pay. The architect is not a magician (quite!), and I do suggest that economies are possible elsewhere than on the architect's drawing board.

"A full day's work for a fair day's wage" is not a bad motto to adopt, and it is rather tragic to think that the all-out effort put in by many of the men engaged on the job is offset by the slackness and "couldn't care less" attitude of some.

IMPORTANCE OF PRE-PLANNING

We must increase the speed of erection, but this, with the same amount of labour, will need more materials. Therefore with speed of erection there must be a greater production of materials. Both these factors, properly organised, will work towards lower costs. One way of speeding production is pre-planning, and in spite of the advice of productivity teams and the like we are still commencing contracts before we are fully prepared. It is generally agreed that there should be more collaboration between the architect, builder, sub-contractor and others engaged on the job, and it has been suggested that elected representatives of all these groups should confer on a national level from time to time.

I would suggest that this conference might be more useful at a much lower level—a local level where a local authority is having its houses erected by local contractors, and on regional level where applicable. For example, if the half-dozen or so local builders in a town, through their association, met the borough architect, engineer and quantity surveyor, with operatives represented also, and discussed ways and means of speeding up the job and reducing costs, I am sure good results would be obtained. The individuals sitting round the table would be those who are concerned with that particular operation and there would be much more likelihood of the eventual recommendations being carried out than if they were the subject of a report from some remote national committee. It is up to architects to take the initiative in this matter—the architect is the captain.

THE NEEDS OF THE LOWEST PAID

In the design, and, later on, the actual building of *The Builder* Low-Cost House, which we afterwards christened "The Hopley House," we had experience of this sort of thing. The quantity surveyor and the builder joined the architects on discussions regarding the job, and on one occasion the builder sent his plumber down to the office to discuss the actual carrying out of the plumbing to the house. We had taken particular care to reduce pipe runs to a minimum and had achieved a very compact layout which would be, to a great extent, prefabricated, but after discussion with the plumber we were able to improve still further.

The need is for more houses, more quickly, at less cost and therefore lower rents, and I am sure the closest collaboration between members of the team, with free criticism of each other's efforts, will go a long way towards achieving our aims.

Much more could be said about organisation and productivity, but I leave that to the expert in such matters and pass on to the planning and construction of the house. Just let us remember what these high costs really mean. The 1944 Housing Manual proposing certain improvements on pre-war houses, contained the following passage: "The improvements proposed can and should be attained without adding to the cost of building. If costs were to be increased the rent might well be found an onerous burden and even, in some cases, wholly unacceptable."

That is exactly what *has* happened. I know of one town, at least, where people who were next in turn on the waiting list, and whose need was proved to be the greatest, had to refuse a council house because they could not afford the rent. Must people live in badly overcrowded and often insanitary and unhealthy circumstances because they cannot afford the rent of houses built to present-day standards? Could we not build a proportion, however small, of houses below present-day standards? There could be special control of the planning and design of such houses and proof would have to be given by each local authority that such houses were needed in its area. The Government could allow only a trickle, if necessary, of such houses to meet the requirements of the lowest paid worker and his family. They would be something between the average post-war house and the appalling conditions under which some people now live—the two-rooms for a family of five, and the ex-army nissen hut. In other words, a standard far better than these families have now, but not what we would like them to have if building costs were lower—*but it would be a great improvement for these families and it would be something they could afford.*

THE NEED FOR REALISM

While on the subject of what tenants can afford, I quote Mr. Lindgren, then the Parliamentary Secretary to the Ministry of Local Government and Planning, who said on April 7, 1951: "The approach of the recent *Builder* competition was to my mind all wrong. They said 'What can we provide for £1,000?' The answer was something which those of us concerned with decent housing conditions cannot accept. The more correct approach is 'What are the essential standards of accommodation and fittings and what can be done to bring the cost of provision of these standards within a rent which does not press hard on the tenant?'"

Well, of course, if you are a realist, your answer to the question as posed by Mr. Lindgren is *The Builder* Low-Cost House or similar type. If you are *not* a realist, your answer is something much more expensive, and you should therefore carry your argument to its logical conclusion and raise minimum wages to a level where the lowest paid worker needing a home can afford the standards which you insist are necessary. You can't have it both ways.

Mark you, the same speaker, in answer to a question referring to hutted camps and people living in ex-army nissen huts, said that people who occupied them preferred huts to the type of accommodation they had left or to no home at all!

PLANNING THE HOUSE

Now I must return to my main theme, taking my first point, "The planning of the house." It is interesting to go back and see what has happened to space standards for houses during the post-war and immediate pre-war periods. The 1927 Manual reprinted in 1934 recommended 610-810 sq. ft. with an average of 745 sq. ft. for a three-bedroom house with one living room, and a million council houses were built between the wars to these sizes. The Central Housing Advisory Committee in 1944 (i.e. the Dudley Committee), recommended 900 sq. ft. and the Ministry of Health

sent out a Housing Manual recommending 800 to 900 sq. ft. This was raised by the Government in 1945-6 to 900 to 950 sq. ft., but, as the Girdwood Committee pointed out, this had become, in actual practice, 1,050 sq. ft. on average. Most people now realise how much above actual requirements these figures were.

It is interesting to note that in Sweden they go down as low as 580 sq. ft. for a type of timber prefab and 570 sq. ft. for a brick-built flat.

The Dudley Committee in 1944 suggested that building costs would eventually stabilise at about 30 per cent. above those prevailing in 1938-9. There are various opinions as to where costs are in relation to pre-war, but I think it is safe to say they are now about 300 per cent. of 1939 costs. Instead of a 30 per cent. rise they are three times as great, or, in other words, a house costing £450 in 1938 was expected by the Dudley Committee to cost about £585, whereas, in fact, it costs about £1,350.

This is not a criticism of the Dudley Report, for who could possibly foresee increases of this magnitude?—but we must remember that on this estimate the Dudley Committee assumed that we would be able to afford the standards it recommended, when, in fact, of course, many of us cannot. Desirable as these standards are, let us face facts and admit that for many of the people with the smallest pay-packets, they are too high.

In addition, a true relationship between standards and financial means would lead to more houses. The Girdwood Report states "We have calculated that had the pre-war size of house been retained and certain items of the present equipment omitted, labour and materials might have been released on a scale sufficient to build from 10 per cent. to 15 per cent. more houses, leaving in addition a balance of labour and certain materials, including timber, available for other purposes.

BACK TO EARTH

In an attempt to bring the feet of those remote people who set the standards back to earth, *The Builder* newspaper held its £1,000 house competition and several other low-cost houses were built in various parts of the country, all of which proved what could be done to reduce costs without necessarily sacrificing amenity. In reducing costs by the method of reducing size (as distinct from reducing structural standards and quality of materials) one should be very careful in one's methods. In the "Hopley" house we reduced pure circulation space to a minimum by eliminating the hall and retaining merely a small lobby. The Ministry have now followed suit in some of their latest plans illustrated in the second supplement of the 1949 Housing Manual.

In this connection it is interesting to note that one criticism of the "Hopley" house made by the Ministry officials who visited the prototype was that the kitchen of 82 sq. ft. was too small, whereas out of 15 working kitchens in the latest Ministry plans, eight are smaller than the "Hopley" and the lowest is 58 sq. ft. ensuring 280 sq. ft. total living space while allowing the kitchen to be reduced to 58 sq. ft. is, in my opinion, fantastic. Merely omitting a door so as to leave a door-less opening into an adjoining hall-cum-dining-space, does not alter the fact that this kitchen is 58 sq. ft.

BEDROOM SIZES

While on the subject of these latest Ministry plans, which were presumably prepared to show methods of planning which would reduce costs, I must again emphasise the fact that when we are reducing space we must be careful which spaces we reduce. The 58 sq. ft. kitchen is one example. Another example in the opposite direction is a bedroom of 153 sq. ft. in a house which is supposed to be economical—when 135 sq. ft. is sufficient by regulation and more than sufficient in my view. This is not economy; it is waste.

The Girdwood Report uses an expression which seems to me to fit the case very well. In dealing with the question of the second w.c. it states that the cost is "disproportionate to its value to the tenant." I think this can be said of many other items now that costs have rocketed to where they are, and it can certainly be applied to the bedroom of 153 sq. ft.

The Ministry allow 110 sq. ft. for the second bedroom (a double bedroom) which is to accommodate two children—who may be any age because children do grow up and may remain with the family until they themselves are adult. This bedroom of 110 sq. ft. probably has in it two single beds, yet the other double bedroom having in it probably a double bed and accommodating the same number of people, must be 135 sq. ft. Surely the 110 + 10 sq. ft. for the possible baby's cot is sufficient? It would appear that the L.C.C. think so because they are building first bedrooms at 120 sq. ft., and surely there should not be one rule for one local authority and another for the rest of the country?

Sound economies can be made in house building by the acceptance of satisfactory and commonsense standards of 120, 110, and 65 sq. ft. for the bedrooms. These areas, together with the bathroom, landing and stairs give a total floor area which should be repeated below. This total on the ground floor should be so planned as to give a maximum living space and minimum circulation space, but not a kitchen of 58 sq. ft.; 80 sq. ft. should be a reasonable minimum kitchen for a family house.

Other methods whereby space can be saved are the elimination of the through passage, using the space for other purposes, and by the careful planning and disposition of furniture, fittings and door and window openings. The smaller the house the more difficult it is to plan—and by planning around the furniture and by utilising every square inch of space, one can save on the total area. For example, if by very exact planning a house can be reduced by 12 in. in a width of 20 ft., then a saving of 20 sq. ft. is made on each floor, and the total of 40 sq. ft. means something in the region of £64 saved, with a corresponding saving in road costs and land. This may sound very obvious and elementary, but it is not always appreciated, especially when the adjustment is only, say, 3 in.

There is not sufficient difference between the costs of three-bedroom and two-bedroom houses, and here again economy can be made. How often do we see a two-bedroom house which is really 2½—that is, having a bedroom about 30–40 sq. ft. bigger than it need be? The third bedroom is a minimum of 70 sq. ft., and if an equivalent area is eliminated on the ground floor on the two-bedroom house a saving of at least 140 sq. ft. must be made. This represents about £230. If this is not done, then the two-bedroom house is uneconomical.

We must be more ready to accept new ideas. The layman is reluctant to accept change and often criticises house plans where they are new, whereas the informed technician will often find more to criticise in the features which are conventional. On the other hand, when introducing new ideas, architects should make sure that these new ideas are either improvements or economies—or both! Introduce unconventional ideas by all means, but make sure they are either improvements or economies. The *effective* floor area is the important thing, not the actual floor area—these are not always one and the same.

Finally, on the question of planning the house, may I suggest that when all the space-saving arrangements have been considered and the plan is thought to be the last word in economy, it should then be closely examined, with all the furniture and fittings drawn in, to see if an inch or two here and there could not be saved. It is surprising what can be done by this minute detail examination of a plan which it was thought could not be improved.

CONSTRUCTIONAL METHODS

My second heading was the construction of the house and here we must be particularly careful not to introduce economies in capital expenditure at the expense of costs of maintenance. The Girdwood Report states that an examination of non-traditional forms of construction reveals no saving in cost and there has been little advance since that was said. In a paper on "Economics of Maintenance" at last year's conference of the Institute of Housing, Mr. H. C. Hampton stated that an extra £100 on capital cost based on our 60-year framework has the same effect on the weekly rent as an annual repairs expenditure of £3 12s. 0d. or 1s. 5d. per week. He goes on to say "One does not need to consider for very long to realise how easily an unwise saving of £100 in capital expenditure might cost more than an average of £3 12s. 0d. a year in upkeep."

Savings in construction can be made by more standardisation and simplification. The British Standards Institution works towards this goal and all concerned with the job of house-building should strive for it also.

Prefabrication of small units will also save costs—for example, could we not have doors already fitted to frames and

with door furniture already fitted delivered to the site? Fittings and fixtures must come on to the job already assembled where possible. Plumbing must be designed in such a way that the maximum amount of prefabrication can be introduced and the minimum amount of material used.

CHOICE OF MATERIALS

On the question of materials—here again we must guard against rising maintenance costs—we must avoid badly seasoned timber (when possible!) and cheap ironmongery—but on the other hand, we should avoid the use of expensive facing bricks and excessive use of the artificial stone window surrounds and other non-essential features. Here and in the form of construction the conference of architect, quantity surveyor and builder which I referred to earlier can lead, I am sure, to satisfactory results in the final figures.

On the siting and layout of houses much could be said—in fact, it could form a subject by itself—but I will merely comment that net density of about 12 or 13 houses to the acre can be obtained with adequate space about the buildings. With the introduction of a proportion of flats according to need the density can be about 14 dwellings to the acre. This can result in a saving of cost of land and roads per dwelling as compared with the average, which seems to prevail at present, of 10 or 11 to the acre.

Lastly, there is the item of roads and services, and here, I am sure, there is room for much economy. I have never understood why a small cul-de-sac serving, say, 20 houses, should be constructed in the same way as a principal road through the centre of a housing estate. Surely, with its comparatively infrequent use it need not be so elaborate in construction? Can we not dispense with pavements in such cases? And what is wrong with the short gravel drive where the access is only to about a dozen houses? Where a pavement is necessary but does not take heavy pedestrian traffic, need we have flagging? I am certain that these items, which, after all, are ancillary to the houses themselves, can be the subject of economy. We always think of economy in housing as the saving on the cost of the house itself, but we never seem to consider saving on the things which go with the house.

Common trenching for services could result in saving too, and on street lighting. I am sure the present standards, admirable as they are for main roads and principal estate roads, are far in excess of what is really necessary on the minor roads. In the case of a recent estate I was connected with—by the time the engineer had finished with his street lighting—(all in accordance with Ministry of Transport regulations) it resembled a forest of concrete posts by day and Blackpool illuminations by night.

RECOMMENDATIONS

To summarise my points, I would recommend the following suggestions with a view to reducing the cost of houses:

1. The introduction of a smaller house than the present standards in limited numbers to enable the lowest paid citizen to improve his present impossible living conditions.

2. The acceptance of 120 sq. ft. for the first bedroom and the avoidance of wasteful planning such as I have mentioned—but I must add—no kitchens of 58 sq. ft., please!

3. The elimination of all unnecessary circulation space.

4. More standardisation and simplification and greater degree of prefabrication.

5. The avoidance of expensive materials where cheaper ones are efficient and do not cause high maintenance costs.

6. Careful siting and layout to avoid excessive site works, foundations and filling.

7. The introduction of cheaper forms of construction for roads of a minor character and the reconsideration of the present standards of street lighting.

8. Last, but perhaps the most important, and the item which can embrace all those already mentioned, the close consultation between architect, quantity surveyor, engineer and builder, with free discussion and criticism.

The problem of economy in housing is a complex one and a very real one. We all struggle to live within our means individually, yet collectively we live beyond our means, and local housing authorities are no exception. The policy of subsidising the housing of the lowest paid citizen who could otherwise not afford to be properly housed is commendable, but we are housing persons off the waiting list almost regardless of income and means, so that fewer and fewer are subsidising more and more, some of whom can afford *not* to be subsidised. The architect will make *his* contribution as he has done already (within the limits he is allowed to operate), but it requires the all-out efforts of *all* concerned with the provision of houses right down to the labourer and the apprentice.

DISCUSSION

In the discussion which followed, Mr. Arthur Kenyon, C.B.E., F.R.I.B.A., M.T.P.I., after first congratulating Mr. Hopkinson on the careful way in which he had dealt with a very difficult problem, referred to his remarks about collaboration between architect and builder. It was difficult, he said, to get this collaboration at an early stage because, unlike America where there was no system of tendering, the British architect could not confer with the builder until he had received a tender.

Referring to the size of houses, Mr. Kenyon said that before the war three-bedroomed houses of 650 to 700 and 750 sq. ft. in area frequently had bathrooms on the ground floor. There were, it was true, disadvantages to this arrangement, but he thought it might be necessary to think about adopting it again. He also criticised the Housing Manual's demand for definite sizes of accommodation. The battle of sizes (as he called it) should be eliminated, for all it amounted to was the putting together of jigsaws. He disagreed with the theory that a particular room should be such and such a size. The designer should be able to use his imagination in such matters.

Commenting on Mr. Hopkinson's remarks about space saving, Mr. Kenyon said that the tendency of furniture manufacturers to make large items of furniture was not in keeping with the provision of small houses.

Continuing, the speaker said that in his opinion it was not good policy to use the cheaper type of facing bricks. Poor bricks and poor roofing material would produce a lot of dull houses. In building houses now, he thought it wise to consider what they would look like in a few years time. Experiments in non-traditional house-building had revealed no new materials which would withstand the effect of time.

Of the engineer, Mr. Kenyon said that he had done very little towards helping to reduce building costs. He (the engineer) was restricted by bye-laws to an even greater extent than the architect. He had, however, a very big contribution to make. The cost of roads and other services which were the engineer's responsibility could be reduced in many instances.

Mr. Kenneth Lindy, F.R.I.B.A., said that high building costs had in many cases put the rents of new houses beyond the reach of those whose names were on the local authorities waiting lists for houses. He believed that to a large extent the remedy lay in the hands of the operatives whom he thought were capable of greater productivity. Every effort should be made to stimulate the enthusiasm of the operatives for the work which they were doing.

He did not agree with the suggestion that the public was willing to accept smaller houses. They had come to expect the desirable standards of accommodation which had been provided after the war. They had heard so much talk about housing subsidies that they thought that the gap between what they could afford and what standard of accommodation they desired could and should be bridged for them. They did not seem to realise that they were paying towards the subsidy.

Mr. Llewellyn-Smith praised *The Builder* for organising the Low-Cost Housing Competition, and went on to criticise those politicians and Government officials whose attitude was to set the standards of housing that were desirable and completely disregard the economic considerations. He pleaded for some relaxation of the standards which at the moment had to be complied with. Often they were outrageous and ridiculous. Men earning craftmen's wages could not afford to live in the houses which were being provided primarily for them.

Mr. Smith said that it was encouraging to know that a good deal of building research was in progress. He thought, however, that we should work for a simple solution, not a complicated one.

Mr. Kerrill-Vaughan appealed for a more realistic attitude towards site costs. At present, he said, it seemed that the accent was on good layout rather than on the houses being built. He had calculated that last year the layout costs of some municipal housing schemes represented about £250 a house.

Because the current production of bricks was not adequate to meet the huge demand which existed for housing, he suggested that all that was best in the numerous systems of prefabrication which had been produced should be combined to form a smaller number of methods by which prefabricated houses could be mass-produced.

The view that the ministerial examination of bills of quantities was a cause of unnecessary delay in housing work was expressed by Mr. Harry Monson, F.R.I.B.A., who also maintained that a large kitchen was an essential feature in the modern house.

Sir Hugh Beaver and Mr. Alister MacDonald also took part in the discussion, following which a vote of thanks to Mr. Hopkinson and the Chairman was proposed by Lady Cynthia Colville (President of the Association.)

BUILDING EXPANSION

Mr. Eccles Explains His Policy

MR. DAVID ECCLES, Minister of Works, spoke of the damage suffered by the building and civil engineering industries in recent years as a result of restrictive controls, and explained his policy to encourage the expansion of building production, at a luncheon of the National Council of Building Material Producers, held in London on March 25. MR. ECCLES said:—

Builders and civil engineers, who make the market for your products, can raise their output by a quarter if they have the freedom, the incentives and the materials to do so.

As it is, masters and men turn out in five days what they know well could be done in four. Here is a challenge which must be accepted. The Government and leaders in all sections of the building industry must get together and demolish the obstructions, which have grown thick and fast since the war, to better work and higher output.

This is what I am trying to do. When I talk to manufacturers and contractors I always have in the back of my mind the thought that before the industry can get fully under way the Government must get *out* of *its* way.

If the demand for your products is to expand the builders must have more freedom. The post-war planning and controls have halted and held up the smooth progress from one job to another. The only man who really knows when his business needs more work is the builder himself. Too often the licensing system has taken away the responsibility which the employer should carry in deciding the time-table of work; when these decisions are in someone else's hands his costs rise and his output falls.

Mr. Macmillan and I realise the damage done to the rate of building by restrictive controls. We cannot sweep them away at once. Indeed we must wait for the Government's credit policy to have its effect and cleanse the economy. We are therefore concerting action to dismantle them by stages and thus to restore responsibility to the men who will manufacture materials and put up buildings much better if the Government does not try to do their job for them.

Budget Incentives

The second factor in expansion is incentives. The best incentive is the confidence that when a building job ends another will be there to follow on. But we also want to earn and keep a reward that seems in proportion to the effort we make. Mr. Butler in his Budget has taken the first and a big step in the right direction. The increased income-tax allowances will increase production. When in June the changes in P.A.Y.E. come into operation the men will see that overtime brings in more than it did.

But whatever the Government does on the score of incentives there can never be a substitute for an adequate supply of building materials. Steel will have to be husbanded while the defence programme is being carried out. As Minister of Works, I am as interested as any producer in the future of the market for the materials represented on your council. The long-term outlook is good but we must watch closely the immediate position which is not free from difficulty.

Take first finance. The Government's policy of stiffer interest rates is an essential weapon in the campaign against inflation. Dearer money will add to the costs of the building industry, but the burden brings its reward, for when there is an end to inflation it will soon be possible to make a bonfire of licensing for all but the big jobs. In the meantime I can help by speeding up the payment of contractors' accounts owing by the Ministry, and Mr. Macmillan is encouraging the local authorities to do the same.

I know, too, that there is a hesitation in some markets for materials, due either to changes in housing plans to meet the new standards, or to some de-stocking by those who think that prices are high enough, or to the difficulties of maintaining sales in export markets. All these matters I am watching. I think the difficulties are temporary and will disappear as our expanding programme gets going. Indeed it does not need much argument to prove that unless you produce more materials the rate of house-building will fall short of our declared policy.

Encouraging Conversions

In one section of the licensing system I am trying now to give more freedom and that is the conversion of old houses into flats. When licences for conversions are held up I am arranging for local authorities to consult us before turning down any desirable scheme.

Coming back to building materials, we are all interested in their price. I found that the Ministry of Works was operating a number of price-controls which had outlived their usefulness. I have done away with nearly all these controls against assurances, which the producers most readily gave, to keep prices steady this year unless there are further big changes in costs.

When I began this process of decontrol I was told it was highly dangerous because the manufacturers would gang up and charge excessive prices as soon as the Ministry's policemen were taken off the beat. I had two answers to these advocates of permanent controls: first I said I believed in freedom as a principle; second, in the particular case of the producers of building materials, I had confidence in their sense of responsibility. I am sure this is a good risk. But you should be under no illusion what will happen if the new arrangements are abused. We shall be judged by our record; so let us work together as a team and show that we know how to do our job well.

Election of B.M.P. Office Bearers

At the annual general meeting of the National Council of Building Material Producers, held before the luncheon, the following office bearers were elected for the year 1952-53: President, Sir Hugh Rose, Bt.; vice-presidents, Messrs. W. H. Pilkington and F. C. Braby; and hon. treasurer, Mr. J. L. McConnell.

SAVING STEEL : USE OF HIGH-STRENGTH BRICKWORK

FOR many years it has been usual to build structures of more than two storeys high as framed buildings, using brickwork for infilling purposes only. Today, however, shortage of steel has, in some instances, induced designers to abandon steel and reinforced concrete frames in favour of load-bearing brickwork. But this has not meant a reversion to the brickwork of a century ago. The practice then was to build, in lime mortar, comparatively thick walls which, because of their thickness, could sustain far greater loads than they were called upon to bear. Modern high-strength brickwork is built with cement mortar and is designed according to engineering principles; the walls are no thicker than engineering calculations show that they need to be, allowing a reasonable factor of safety.

Recently, a number of five-storey blocks of flats have been built with 13½-in. walls, diminishing to 9 in. in the upper storeys. They were designed in accordance with the recommendations of the British Standard Code of Practice 111.101: "Masonry, including brickwork, unreinforced," using bricks with a minimum crushing strength of 3,000 lb. per sq. in. and a cement mortar that was theoretically almost as strong as the bricks. Another interesting development in this field is the design of a number of five-storey blocks of flats, in which no wall is thicker than 9 in. of brickwork. To make this possible all the inner walls, including those normally built as thin, non-loadbearing partitions, will also be loadbearing walls in 9-in. brickwork; the floors and roofs have been designed to take advantage of these extra means of support.

Economy in Materials

High-strength brickwork is designed to close limits so as to effect the utmost economy in the use of materials. Because of these close limits in one scheme the designer considered it necessary to line the air-brick opening with steel boxes. In the blocks of flats with 9-in. walls the ground storey will be built in engineering bricks.

It is clear that only the best materials and the highest standard of workmanship will do. Unfortunately, experience has shown that this standard is not always attained.

In a recent series of tests of brickwork designed to a crushing strength of 3,000 lb. per sq. in. the strength of sections cut from the brickwork varied from 1,280 lb. to 680 lb. per sq. inch, and in another series results ranged from 1,390 lb. to 820 lb. per sq. inch. In tests of the mortar alone one series gave crushing strengths varying from 2,740 lb. to 630 lb. per sq. inch and in another series the range was from 3,430 lb. to 980 lb. per sq. inch. A factor of safety to cover such variations would be very wasteful of materials and would rule out high-strength brickwork on economic grounds.

In almost every case the low strength was due to imperfect bedding of the bricks or to badly mixed mortar. Both these defects can be avoided by sound workmanship and good organisation, but there are difficulties in using the kind of mortar necessary for this type of work. In order to obtain the required strength a straight cement-sand mortar is generally specified and the use of washed sand is insisted on instead of the soft building sand of ordinary mortar mixes.

With such a mix the mortar is harsh and difficult to work, yet for high-strength brickwork it is essential to obtain a good level bed, to flush up all vertical joints thoroughly and to ensure that everything is properly bedded in mortar, especially such structural elements as pre-cast concrete floor beams. If all this is not done very thoroughly the work will fall below the design strength—perhaps dangerously below.

Mortar of the necessary strength can, however, be obtained with mixes giving better workability. The addition of a small proportion of lime, up to one-quarter of the cement content, or one bag to every four

bags of cement, will effect an improvement. There is no advantage in using mortar that is stronger than it need be and design requirements can be met by specifying appropriate cement-sand mixes improved in this way.

Nevertheless, the mortar will still be more difficult to use than lime-cement mixes made with ordinary building sand. It may be necessary to resort to grouting the vertical joints as the work rises, though this should not be done unless it is found to be the only way of completely filling all the joints.

The mortar must have the same strength throughout each batch and there must be no serious variation in strength from batch to batch. Great care must therefore be taken in mixing and the mortar must be used while it is fresh. Like all cement mortar it should not be used after the initial set has taken place and must not be retempered with water or batched up with freshly mixed stuff. It cannot be mixed in bulk; a fresh batch must be knocked up at least every two hours and shorter intervals are better if they can be arranged. As the quantity required at any one time is small it may not always be economic to use a mixer specially for it; for hand mixing a proper mixing platform must be provided and two men are generally required for turning the materials at least twice dry and twice wet.

Special Considerations

The careful workmanship required throughout this kind of work has its counterpart in the attention that must be given to the details of organisation which make it practicable. The main consideration is that the rate of bricklaying will inevitably be slower than on panel walling or housing work and that the special conditions should be recognised in any incentive scheme adopted.

The walls should rise together and more scaffolding may therefore be needed in the early stages.

It is extremely important to keep the courses level and the walls accurately vertical; with the heavy bricks sometimes used there is more risk of settlement and the brickwork should not be raised more than seven or eight courses a day. This may mean that each bricklayer will be working over a greater length of walling than is usual, with bricks stacked at more points and with a greater number of spotboards. In such cases bricks and mortar would have to be carried over longer distances and greater use of hoists and special brick-barrows might prove an advantage.

High-strength brickwork demands careful workmanship and close attention to detail in fulfilment of the specification. In spite of its drawbacks, it can be a very useful and economical form of construction; given the conditions set out above, it can compete with structural steel and with reinforced concrete, to the considerable advantage of the public, of local authorities and of all in the building industry. Troubles and delay can be avoided if management, foremen, craftsmen and labourers understand how it differs from normal brickwork and why such meticulous care is essential.

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Structural Engineers' Elections

The Institution of Structural Engineers have published a list of the names of those who have been elected during March to membership of the Institution.

TRADE WITH CANADA

A Policy of Expansion

MR. PETER THORNEYCROFT, President of the Board of Trade, addressing members of the Canadian Chamber of Commerce in Great Britain in London on March 28, said that this country's objective could not be attained by a merely negative and restrictive policy.

"While we have undertaken, with other members in the sterling area, the obligation not to live beyond our means, and while we know that there must be a reduction of imports, we also know," said Mr. Thorneycroft, "that in the long run the solution of our problems lies in the expansion of mutual trade. The courageous and imaginative Budget is a step in that direction and will, I believe, reinforce the export drive."

We must look forward in the long run to a steady, increasing volume of trade in both directions, but what we asked at the moment was the fairest and widest opportunities for the expansion of our trade. There had been in Canada, as elsewhere, a contraction of the demand for certain consumer goods. Bearing this in mind, credit could be given to British industry for having gained a foothold in the Canadian market.

Opportunities in the Building Field

OPPORTUNITIES which now present themselves to manufacturers of building equipment, plant and materials to enter the Canadian market were referred to in a talk given to the Building Industries Luncheon Club on March 26 by MR. IAN M. LESLIE, J.P., Hon.A.R.I.B.A., Editor of *The Builder*. Col. D. C. Mallam presided over the meeting, held in the Hungaria Restaurant, S.W.

Canada, said Mr. Leslie, imported many things which were needed for her very considerable building programme, and a tour which he and his colleague Mr. John Perks had made in 1950 on behalf of *The Builder* had convinced them that the opportunity was there to increase very considerably the amount and variety of building materials exported from the United Kingdom. There had been considerable expansion in this field in the last three years, the figure of £2,026,000 in 1949 having risen to one of £4,137,000 in 1951. "Yet we are doing no more than scratch the surface," declared the speaker, "for it has been calculated that the potential target of exports to Canada could be three times greater, and that without cutting to any great extent the Canadian home production."

After outlining some of the difficulties standing in the path of exporters and the many positive aids, among which was the advice and help made available to intending exporters by the Dollar-Export Council, the Board of Trade and the Exports Branch of the Ministry of Works, Mr. Leslie welcomed the experimental shipping services from Great Britain to Canada, using the Great Lakes. When these were fully developed they could save in freight charges and in breakage losses. They could particularly help the British manufacturer to reach the rapidly developing markets in the West, especially in Alberta.

U.K. Goods in Demand

Their tour disclosed a demand for products such as glass and cement (which at present comprised the bulk of our exports) and also for such things as locks and door furniture, water distillation plant, electrical goods, nails, glazed tiles and school equipment. "I do not wish to give the idea that it is a simple matter to break into this market in face of the keen U.S.A. competition," said the speaker, "but I do suggest that firms with competitive lines with a potential appeal will do well to seek now a foothold in a country such as Canada, which has an expanding, almost ceilingless economy. When the St. Lawrence seaway becomes a fact, as now seems likely within measurable time, Canada must go right to the top of the nations of the world.

"The time to look at these markets is the present, not only because other interests may shortly become securely entrenched, but because the plain fact, as the Chancellor of the Exchequer has recently made abundantly clear, is that we either build up our exports to the dollar countries or face national disaster. I therefore appeal to manufacturers with likely products to send out top-line representatives to survey the market for themselves. I can assure them of one thing: they will find the trip exhilarating beyond belief; they may well find it profitable beyond their dreams."

In the discussion which followed, MR. TOM BROCKIE, of the Exports Branch, M.O.W., outlined the help his department was anxious to give to firms interested in surveying the Canadian market, and described the function of the Dollar Exports Credit Guarantee scheme, which existed to smooth the way of intending exporters. MRS. PLEYDELL BOUVERIE, who had recently returned from a tour of Canada, emphasised the opportunities presenting themselves to manufacturers, and also the need to lose no further time in setting surveys in hand. In a few more years the chance might be gone.

BUILDING RESEARCH IN CANADA

Progress Report

THE second progress report of the Building Research Division of the National Research Council, Ottawa, points out that many aspects of building must be considered in relation to local climatic conditions and for this reason the work of the Division of Building Research has been planned on a regional basis, with the concept of the Dominion as composed of five general climatic regions: British Columbia, the Prairie Provinces, the North-West Territories, the Central Provinces of Ontario and Quebec, and the Maritimes. Research has been carried out in all these regions in co-operation with local and provincial authorities and universities, and it is planned that regional centres of activity will eventually be established across Canada. The first of such centres, the Prairie Regional Station, was set up in August, 1948, and the report describes a wall panel testing unit which was constructed there in 1950. The purpose of this unit was that representative wall sections could be subjected to controlled conditions duplicating those of the prairie winter. The design and construction of this major test facility constituted the initial project of the station.

In addition, equipment has already been set up in the laboratory for commercial testing of building papers under the requirements of Canadian Government Specification. Much of this equipment has considerable flexibility and may be used in more fundamental studies on the effect of moisture movement in building materials. This phenomenon is of prime consideration in the research programme of the entire Division

and is one in which instrumentation problems are exceedingly complex.

The station has also assisted in field investigations conducted for Central Mortgage and Housing Corporation. In fact, a study of serious condensation problems in some of the Corporation's rental houses in the prairie region constituted one of the first projects in the development of the Station. The results of this investigation contributed in some part to the design of certain features of the wall panel testing unit and planning a future research programme.

The report also contains an article by J. H. Jenkins on "Forest Products Research in Canada," in which the author points out that the work of research at the two Forest Products Research Laboratories is planned with a view to keeping a reasonable balance between essential fundamental research and applied research which is of direct and immediate value to industry and is divided into the following 11 main groups: Timber engineering, plywood, containers, wood preservation, timber pathology, wood paints and coatings, wood chemistry, microbiology, logging and milling, lumber seasoning and technology.

In timber engineering, research is carried out to determine the mechanical and physical properties of Canadian woods and the application of the resultant data to timber construction and fabrication. Fundamental strength values are determined as a basis for comparison between the various wood species, and working stress data for Canadian timber are compiled for use by design engineers and in building codes.

Plywood has overcome the problem of the directional strength of wood which, while phenomenally strong along the grain, has comparatively low resistance to stress across the grain. Research work is aimed at determining the feasibility of producing veneers from species not generally considered to be desirable and toward the introduction of better techniques in cutting and bonding.

Every endeavour is made by the two laboratories to keep abreast of all new developments in the use of wood so that applied research investigations can be directed toward a more complete and effective utilisation of the annual forest harvest.

Mr. R. F. Legget is Director of Research.

OBITUARY

Thomas F. Shepheard, F.R.I.B.A.

We regretfully record the death on March 28 of Mr. Thomas Faulkner Shepheard, F.R.I.B.A. He was 77 years of age.

Herbert Reid, M.B.E., F.R.S.A., F.R.I.B.A.

We announce with regret the death of Mr. Herbert Henry Reid, M.B.E., F.R.S.A., F.R.I.B.A., of Edwards, Reid and Begg, architects, Prince Buildings, Colombo, and of Tornaveen, Aberdeenshire. Mr. Reid died suddenly at Colombo, on March 21.

C. H. Strange, F.R.I.B.A.

We announce with regret the death, which occurred on March 30, of Mr. Charles Hilbert Strange, F.R.I.B.A., of Tunbridge Wells. He was born in 1867.

Mr. Strange's architectural education was with the Architectural Association. His awards included the A.A. Silver Medal (Essays), and prizes for building construction and elementary design. He was successful in competitions for schools at Southborough and for a Tunbridge Wells housing scheme. His works include elementary schools and chapels and schools for Congregational and Wesleyan bodies; and country houses in Kent and Sussex.

HOUSING POLICY

B.B.I. Annual Dinner

THE reason why the Government had not set a "target" for the number of houses to be built annually was given by MR. HUGH MOLSON, M.P., Parliamentary Secretary, Ministry of Works, when he spoke at the annual dinner of the Builders' Benevolent Institution held at Grosvenor House, London, on Tuesday. Sir Albert Braithwaite, D.S.O., M.C., M.P., president, B.B.I., was in the chair.

Mr. Molson, who was replying to the toast of "H.M. Government" proposed by MR. J. IAN ROBERTSON, president, National Federation of Building Trades Employers, said that the output per man in the building industry was about 20 per cent. less than before the war. He did not wish to place blame for this state of affairs but it was the belief of the Government that to fix an arbitrary limit to the number of houses that could be built was likely to discourage the maximum production made by both masters and men. The only limit now was that imposed by the amount of labour and material available. The Government, he said, did not want to control or restrict the industry; they wanted to see production increased in the interests of the country as a whole. One thing they hoped for particularly was an extension of the incentive payment schemes so that the workers could share in the prosperity of the industry.

Sir Albert Braithwaite replied to the toast of "The Builders' Benevolent Institution and its President," which was given by Sir Luke Fawcett, president, National Federation of Building Trades Operatives, in the absence of Mr. Ernest Marples, M.P., Parliamentary Secretary, Ministry of Housing and Local Government. Other speakers were Mr. D. E. Woodbine Parish, president, London Master Builders' Association, and Mr. A. E. L. Robey, president, Building Industry Distributors.

THE BUILDING SURVEYORS' INSTITUTE

Conditions of Membership

THE Building Surveyors' Institute, whose inaugural meeting took place in Sheffield on March 1, have held their second executive council meeting, and some of the decisions taken were as follows:—

Founder membership to be open to building surveyors who have a minimum of five years' approved experience or to persons who have had five years' approved experience as building surveyors but are not now employed in this capacity and are still engaged in the building industry.

"Non-graded" membership can be granted to the junior building surveyor or the building surveyor who has not had the necessary five years' approved experience. These "non-graded" members may eventually be graded as licentiate or graduate members of the Institute.

The next executive council meeting will be held in London on April 26, and on May 3 an open meeting will be held in Birmingham.

The council dealt with a large number of applicants; some of these were elected as founder or "non-graded" members, whilst some were rejected owing to their ineligibility.

Mr. Gordon Smith, of Sheffield, has been co-opted as a member of the executive council to represent the Yorkshire area. The Institute's secretary is Mr. Geo. A. Wain, 18, Moffatt-road, Sheffield, 2.

CRAWLEY ANNUAL REPORT

Rising Costs and Interest Rates Causing Anxiety

SIR THOMAS BENNETT, C.B.E., F.R.I.B.A., chairman of Crawley Development Corporation, referred to the "continued anxiety with regard to finance" experienced by the Corporation in face of the continued rise in the cost of building and the rate of interest charged by the Treasury, when he delivered his annual report to an invited audience of elected representatives at Crawley on March 29.

Since 1948, Sir Thomas Bennett said, building costs had risen by 40 per cent. and the interest rate on Treasury borrowings had gone up from 3 to 4½ per cent. In these conditions, the Corporation had been compelled to increase the ground rent charged for land in the industrial area, and the price for the new standard factories would have to be 4s. 6d. per sq. ft. rack rent, compared with a rack rent of 3s. per sq. ft. which the Corporation had charged when the factories were first building. Fifteen factories were now in production, and three more were building.

In regard to housing, the Corporation had found it necessary to raise the rent of dwellings in June 1951 by amounts varying from 1s. 9d. per week to 4s. 6d. per week; and the substantial increase in building costs in 1951-2, plus the rise in the rate of interest, would make it necessary to raise rents again from mid-April by an approximate equivalent amount; and in addition to place the onus of internal decorations on the tenant.

The Corporation had carefully examined the cost of constructing high flats. In every case they cost very substantially more per sq. ft. of created space than did houses, and they cost a great deal more to administer. The Corporation had accordingly reached the conclusion that in a country town high flats could not be justified either socially or economically.

Development had advanced appreciably in the past twelve months, and detail plans had been prepared for six out of the nine neighbourhood units of the finally completed Crawley. To date, some 730 houses had been completed, and it was hoped that by the end of the year 1,450 dwellings would be occupied. From 1953 onwards it was expected that 1,000 houses a year would be completed.

Larger houses were being built for sale on a 99-year lease.

The Town Centre

After prolonged study, the final plan of the Town Centre had been settled, and was exhibited at the meeting. The views of Crawley Church would form an important feature in the Town Centre vistas. The first shops would stretch from Crawley High-street opposite Woolworth's in an easterly direction, and the first portion would be a pedestrian way with shops on either side, over the end of which would be a café or restaurant on a colonnade.

The siting of churches throughout the New Town had been agreed with the Sussex Churches Joint Planning Committee. Two temporary schools had been opened and a primary school for 600 children would be opened in the autumn.

The total value of Corporation contracts completed totalled £2,400,000, and contracts about to be let totalled £2,700,000.

IN PARLIAMENT

School Building

ON March 25, during a debate on education, MISS HORSBRUGH, the Minister of Education, speaking of the school building programme, said there was no doubt that last autumn the building industry was overloaded. The investment programme that had been undertaken by the previous Government was based on an assumption of greater productivity in the building industry and on a greater supply of certain materials, especially steel. Their estimates were wrong. It was found last autumn that the work that had been arranged under the building programmes could not be completed. The first thing the present Government did was to put a moratorium on new starts, so that, by continuing the use of the labour and materials available, they might be able to complete more of the work under construction. She felt convinced that there was no use whatever in merely adding to the size of the programme and getting more starts unless they felt that the programme could be carried out, that the industry would not get overloaded and that the architects would be able to give sufficient supervision to the work being done. There might be a temporary hold-up perhaps on a housing estate. They were aiming to synchronise the completion of school building with the building of houses, but they could not absolutely guarantee that.

On the question of economy in building and design she hoped that there would be a cut in money, in time and in materials. They wanted the utmost value for the money, labour and materials, and they wanted the local authorities to get value from the buildings they were putting up. The average net cost per place in a primary school started in 1949 was £195. By 1950 it had gone down to £158 per place, and it would now be £140 per place. In secondary schools the figures were £323, £276 and £240. She was absolutely sure that the schools would be not less adequate. The saving was due to the intelligence, hard work and ingenuity of the officials both in the offices of the local authorities and of the Ministry of Education, and the help of many manufacturers who had been considering how they could plan better. They had made economies in superficial area, but they had done so with absolutely no effect on the teaching places in the primary schools. They would have more compact buildings. The economies were in circulation space, long corridors and wide passages. The size of a school with the teaching places kept as they were would be two-thirds of the size of the old school. There were other economies in heating and lighting and in the places where the coats usually hung. All these had made a considerable difference. The cost of the installation of the heating system could now be reduced from 7s. a square foot to 5s. a square foot. They were getting more efficient schemes for the automatic control of fuel consumption. Experiments were now being carried out by the Hertfordshire local authority and the Building Research Station. By these means they would get economy.

Further economy was in site labour. A single-storey primary school built on traditional lines had taken two years to build. Under the new methods they hoped to cut the time by one-third or one-half. That would all help in their building programme. The development groups in her Department, four local authorities, and several manufacturers were co-operating to develop multi-storey construction. They hoped to be able to build secondary schools in 18 months instead of taking three years. These cuts would be welcome and would help the local authorities who had to tackle the building programmes.

New Towns Bill

MR. MARPLES, Parliamentary Secretary, Ministry of Housing and Local Government, moved the second reading of the New Towns Bill on March 31. He said its purpose was to ask for a further £50m. on account of expenditure under the New Towns Act, 1946. The final cost to the Treasury of the new towns in the 14 areas already designated would probably be between £225m. and £250m.

The towns had been designed to cope with a new population of 480,000. The position at the end of February, 1952, was that 3,666 houses had been completed, 5,802 were under construction, and contracts had been let for a further 3,769. In England and Wales it was hoped to build 3,810 in the next six months, which was more than had been built in the first 5¼ years. In a year it was hoped to reach a rate of well over 10,000 a year.

HOUSING SUBSIDY INCREASES

Terms of New Bills

THE main purpose of the Housing Bill, which was introduced in the House of Commons recently by the Minister of Housing and Local Government, is to increase housing subsidies in accordance with the announcement made by the Minister on February 28.

The Bill provides that the general standard subsidy payable by the Exchequer for houses completed after February 28, 1952, shall be raised from £16 10s. to £26 14s. a year. It also provides that the contribution from local rates should be increased from £5 10s. to £8 18s. a year, making a total housing subsidy of £35 12s. This will be an increase of £13 12s. on the former total subsidy of £22 a year.

The new provisions will enable a subsidy or grant to be paid in respect of a house which is, or is to be, occupied by an agricultural worker under a contract of service. The Bill also repeals so much of Section 79 of the Housing Act, 1936, as requires a local authority to obtain the full market price on the sale of a house, and enables the Minister, on giving his consent to the disposal of houses by local authorities, to impose conditions on the price to be obtained.

A local authority is given power—and will be obliged to do so if required by the Minister—to impose conditions restricting the price or rent at which the purchaser may resell or let the house within four years from the sale to him, and to reserve to itself the option of buying the house back if it is sold within that period.

It is estimated that the increase in the annual Exchequer charge for subsidies on each 1,000 dwellings provided by local authorities would be about £11,540, with an annual charge on the rates for increased rate fund contributions of £3,835.

Scottish Subsidies

The Housing (Scotland) Bill, the text of which was published on March 31, proposes to increase the housing subsidies payable to local authorities in Scotland for houses completed after February 28, 1952.

The Exchequer contributions will be increased from the existing rate of between £21 10s. and £25 10s., according to the size of the house, to between £39 15s. and £46 15s. a year. Contributions which local authorities must make from the rates are also increased. The Bill further provides for an increase in the special contributions for new houses for agricultural workers.

Capital grants payable by local authorities to private persons who build houses for agricultural workers are at present confined to houses built in replacement of unsatisfactory houses. Under the Bill these grants will be available for houses built by private persons for agricultural workers whether they replace unsatisfactory houses or not, but the amount of the grants and of the Exchequer contributions in connection with them remain unaltered.

Post Office Building Programme

On March 31, the Assistant Postmaster-General, MR. GAMMANS, in a review of Post Office development, said that the Post Office was living on its reserves. The building programme for the next few years would be cut drastically, and during the next financial year no new building would be started except for defence purposes. "On the telephone side," he went on, "this restriction may have a devastating effect, because what is done or not done now will affect the standard of service to the public for the next four or five years." There were 487,000 would-be telephone subscribers waiting for installations and the Post Office could hope to satisfy only a fifth of them in the next 12 months.

The Henry Wood Hall

In reply to MAJOR TUFTON BEAMISH on March 27, MR. J. A. BOYD-CARPENTER, Financial Secretary to the Treasury, said that no detailed plans had been made for the new Queen's Hall building. But he intended the Henry Wood Hall to be suitable for full-scale orchestral and choral rehearsals. This seemed to be in accordance with the wishes of subscribers to the Trust Fund.

Regulation 68 (c) (A)

On March 25, MR. H. BUTLER asked the Minister of Housing and Local Government whether, in view of the concern expressed by the local authorities through their associations at the anticipated lapsing of Defence Regulation 68 (c) (A), at the end of the year, which in their view would involve the loss of a considerable amount of housing accommodation in areas of acute housing shortage, he would accord to members of the local authority associations an opportunity of conferring on the matter with him personally.

MR. MARPLES said that the hon. Member had misunderstood the position. Consultations had been going on with the local authority associations on the question not merely whether the regulation should be allowed to lapse at the end of the year, but whether in view of its overlap with planning powers it should not be revoked right away. The Minister could not agree with the view of some of the associations that revocation of the regulation would involve the loss of a considerable amount of housing accommodation, since local planning authorities had ample powers to prevent that. But although the fears of the local authorities were not, in his view, well founded, the Minister had decided against immediate revocation. In these circumstances a conference did not seem to be necessary.

New Starting Dates

On March 25, MR. SPARKS asked the Minister of Works when the standstill in sanctioning new starting dates for building work, other than housing, terminated; and at what rate and priority new starting dates were being sanctioned.

MR. ECCLES said the standstill ended on February 29 last. New starting dates since that date were being awarded according to the local availability of building labour. Appropriate priority was given to buildings required for defence and for the export trade.

Cement Shortage

On March 25, in reply to MISS WARD, the Minister of Works, MR. ECCLES, said he was aware of the shortage of cement in the Northern Region. The cement companies had arranged to send substantial additional supplies.

Fuel-Saving Devices

On March 25, MR. NABARRO asked the Chancellor of the Exchequer if, in view of the fact that a certain inland revenue officer would allow the installation of approved solid fuel burning domestic appliances as a charge against Schedule A, Income Tax, whereas others would not do so, the Treasury would make the position clear so that there should be some uniformity over the whole country by allowing all such officers this power in the interests of coal conservation.

MR. BUTLER said he would certainly investigate the matter.

NAMING OF LONDON STREETS AND BUILDINGS

New Regulations

NEW REGULATIONS for the naming and numbering of streets and buildings have been drawn up by the town planning committee of the London County Council. They have been devised, states the committee, "to hold the balance evenly between the sometimes conflicting claims of modern transport and civic amenities."

The new regulations state that street name-plates should be fixed within 10 ft. of every street corner, excluding the width of the path, on both sides of a street. On straight lengths of streets name-plates should be repeated every 200 yards on alternate sides, and at T junctions a name-plate should be placed directly opposite the side street. If the name of the street should be changed, both names should be displayed at the point of change. Street name-plates should be fixed, wherever possible, to a structure, boundary wall, or fence adjacent to the street, at a height of not less than 3 ft. and not more than 12 ft. above the road level, and preferably at a height of 8 ft.

Regulations for the numbering and naming of buildings state that they should be marked on or immediately above the door or on the entrance gate, façade, boundary wall, or fence immediately adjacent to the gate or entrance of the building, or in such other position as to be clearly visible.

They should be marked not more than 8 ft. or less than 2 ft. 6 in. above the level of the ground, or, if on a door, the same distances from the bottom of the door.

Markings should be in durable non-absorbent material—paint is included in this category—the numbers or letters being not less than 2 in. high and in colours to contrast with the background. Arabic numerals should be used.

TIMBER CONTROL'S FUTURE

Government's "Significant Move"

[From a Correspondent]

THE recent announcement reported in our last issue, that, as from April 1, all consumption licensing of softwood, hardwood and plywood formerly dealt with by the Timber Control would be transferred to other departments is regarded by the timber trade as a significant move. For some months now there have been persistent rumours that the Timber Control may, before this year is out, be coming to an end, and the fact that consumption licensing procedure has now passed to other hands is read as a step along this road. On the other hand, the fact that all sections of the trade are now, once again, subject to import licensing may slow up the de-control programme.

Details of the amount of timber which this country can expect from France this year have now been disclosed by the French authorities in an official notice to French timber exporters. The figures are as follows: Sawn poplar, 25,000 cubic metres; sawn oak, 15,000 cubic metres; sawn beech, 8,900 cubic metres; sawn ash, 1,500 cubic metres; sawn hardwood (miscellaneous) 15,000 cubic metres; sawn maritime pine for boxmaking, 42,500 cubic metres; and sawn maritime pine (wagon bottoms), 8,000 cubic metres.

These figures show a considerable reduction on the amount of French timber exported to the United Kingdom during 1951 when something like 4m. cubic feet of hardwoods alone came into this country. The point arises, of course, that with the advent of import licensing for hardwoods the amount of timber from France would have been reduced in any case, but the cuts would, in all probability, not have been so severe as the figures which the French authorities have now notified will be available to shippers.

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IMPROVED OPEN FIRES

"Efficiency Equal to Closed Stoves"

SPEAKING at the annual conference of the Women's Advisory Council on Solid Fuel, held in London on March 20, SIR CHARLES ELLIS said that important developments were taking place in central heating appliances, but the most immediate and interesting results of research concerned the open fire. A modern radiant open fire could give up to 25 per cent. efficiency, but that was rarely obtained in effect in this country owing to excess air transport up the flue.

These facts had, in the past, put central heating methods or closed stoves in a superior position to the open fire. However, comparatively high air temperatures had to be maintained to ensure comfort with purely convective heating and these, in our poorly-insulated rooms and houses, required correspondingly high heat outputs and fuel consumptions.

These considerations had led to a re-examination of the open fire position with its valuable contribution of radiant heat which was so suitable to our humid and variable climate. The solution proposed was, first, to limit the excess air transport up the flue by properly designed openings on the fire and throat; and second, to arrange for circulation of air round the hot body of the stove and obtain some convective heating.

This was a very important development because it met the need for efficiency in use of domestic coal supplies, allowed us to keep our traditional open fires and provided, at far cheaper cost, an overall efficiency comparable to that obtained by closed stoves.

PAYMENT UNDER CONTRACT

Architects', Quantity Surveyors' and Builders' Joint Report

THE Eastern Counties Joint Consultative Board of Architects, Quantity Surveyors and Builders, which was reconstituted after the war, has now issued its first report. The purpose of the Board is to submit recommendations to the appropriate bodies on matters affecting the building industry of mutual concern to architects, quantity surveyors and builders.

The report includes a reference to delays in payment under contract and states:—The attention of architects was drawn through their local chapters to the part they could play in reducing delays by the prompt issue of certificates under contract. Subsequently the Board made the following recommendations:

(a) Variations under Clause 9 should be kept to a minimum by the provision of more precise details and pre-planning as far as practicable. (b) Claims under Clause 25A should be submitted to the quantity surveyor as regularly as possible by the builder. (c) An excessive number of fluctuations claims for very small items in the Basic Schedule of materials were bound to hold up final settlement.

(d) Wages variations necessitating lengthy calculations might be dealt with as a percentage to the wages debit. (e) The quantity surveyor should measure and settle as far as possible as the work proceeds. (f) Variation orders by the architect should be sent to the quantity surveyor at the same time as the builder.

The Board also reports that they have expressed their regret that the professions are not represented on the regional housing production boards.

DUTY ON MOTOR FUEL

New Burden Imposed by Increase

THE CHAIRMAN of the British Road Federation, the Rt. Hon. Lord Sandhurst, O.B.E., has sent a letter to the Chancellor of the Exchequer in connection with the increased petrol tax in which he states:—

"In addition to the huge burden of taxation which road transport has to bear, it is denied means to increase its efficiency and thus make a fuller contribution to industrial productivity. The British Road Federation is convinced that the higher duty on motor fuel is against the national interest. In respect of public transport, we would draw your attention to the fact that Great Britain is almost alone among Commonwealth and Western European nations which taxes diesel oil used in road vehicles at the same rate as other motor fuel. A concession in this direction would help to prevent the further inerease in fares which the higher duty renders inevitable."

IMPROVEMENT IN BUILDING INDUSTRY'S CONDITIONS

Midlands Comment: "Too Slow"

IN A FOREWORD to the annual report of the council presented at the annual meeting on March 18 of the Birmingham Association of Building Trades Employers, MR. J. D. HURD, retiring president, drew attention to the slow rate of improvement of conditions in the building industry. "Materials still continue to be in short supply," he says, "and the labour position is being made more difficult by the defence programme, which is tending to attract men into the factories."

With reference to apprenticeship schemes in the building industry, Mr. Hurd went on to say: "We welcome the new training schemes being introduced by our National Federation in an endeavour to assist in educating our skilled and technical craftsmen." In the Birmingham area, he added, the scheme did not at the moment appear to be giving the numbers required to make up the labour force.

Mr. E. J. Fletcher was elected to succeed Mr. Hurd as president.

AGRICULTURAL COTTAGES

Subsidies and Grants

IN A STATEMENT issued on March 27, the Country Landowners' Association says it welcomes the Government's decision to reintroduce subsidies for privately built cottages for farm workers and grants for reconditioning them. "The withholding of State aid from new cottages tied to farms," the statement continues, "has undoubtedly discouraged owners from building, and the occupiers of old service cottages have been penalised by the refusal of reconditioning grants, without which substantial improvements and modernisation could not be carried out. For some years the C.L.A. has been campaigning to this end.

"The new concessions should give fresh impetus to landowners and farmers to make their fair contribution to the rural housing programme, so necessary to retain the present labour force on the land. The Association hopes that the Government will shortly extend the arrangements to farm cottages built or reconditioned with the help of grants under the Livestock Rearing Act, 1951."

OFFICIAL NOTIFICATION

Timber Licensing for Builders

In accordance with the Government's decision, announced in our issue for March 28, to transfer to other departments all consumption licensing of timber formerly dealt with by Timber Control (Ministry of Materials), the Ministry of Works has taken over from Timber Control, as from April 1, the consumption licensing of softwood, hardwood and plywood required for (1) All private building work (other than housing), costing less than £100; (2) all private building work (other than housing) carried out under a maintenance licence; and (3) building contractors' plant.

Applications for timber licences in connection with (1) and (2) should be made to the appropriate regional licensing officer of the Ministry of Works. Timber licences for all housing work will be issued by the Ministry of Housing and Local Government.

Where timber for work under £100 has previously been issued by a Government Department other than the Timber Control the existing arrangements will not be affected.

Applications for timber for item (3) should be made to Ministry of Works (A.S.72), Lambeth Bridge House, London, S.E.1.

CHEAPER ROADS

Departure from Traditional Methods

A METHOD of making roads is being tried out at Ewloe, a Welsh village on the main road between Mold and Queensferry, which carries a large amount of traffic into Wales.

The experiment is being sponsored by the Ministry of Transport, and a half-mile stretch of roadway is being laid.

The foundation is a weak mixture of concrete with about half the proportion of cement used in ordinary road-making. After the mixture has been laid it is rolled with a heavy steam-roller, and by this means complete compactness is achieved. It is claimed that there is a considerable saving in time and money on materials. Following a traffic test the surface will be completed by a layer of hot asphalt.

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L.M.B.A.

The Association's New Responsibilities

SPEAKING at a luncheon, given in his honour, by the North-Western Area, in Harrow, MR. D. E. WOODBINE PARISH, president of the L.M.B.A., said that the L.M.B.A. this year completed 80 years of work directed towards the wellbeing of the building industry in London, and was justifiably proud of the contribution which it had made during that time. Like many other industrial associations, the L.M.B.A. was now increasingly concerned with the broader industrial problems facing industry and commerce generally, rather than with the sectional interests which had prompted its establishment in the last century. The responsibility of ensuring the most favourable climate in which the building industry could work was a collective one, and called for a high degree of statesmanship instead of the unprofitable pursuit of those sectional interests which were often unrelated to the needs of the community.

"During the past decade," said Mr. Woodbine Parish, "the L.M.B.A. has progressively established closer and more harmonious liaison with Government Departments, the Royal Institute of British Architects, the County Councils within the London Region, district surveyors, borough and urban district engineers, educationists, building industry distributors and many other bodies connected with the industry, all with a view to sustaining a spirit of mutual confidence and providing opportunities for the interchange of views and information so vital to the smooth running of the industry. The holding of Area meetings, too, and the free discussion of all sorts of matters at these meetings, is a fundamental part in the whole structure of the trade association, and it is very agreeable to note the way in which so many of our members make attendance a regular feature of their business."

Mr. C. P. Bliss, Area Chairman, presided.

London Regional Joint Committee

MR. L. J. HOLLOWAY, chairman of the L.M.B.A.'s Working Rule Agreements Committee, has been elected chairman, and Mr. G. C. Marchant, secretary of the National Association of Operative Plasterers, vice-chairman of the London Regional Joint Committee of the National Joint Council for the Building Industry for 1952.

The London of To-morrow

THE administrative committee of the L.M.B.A. paid an official visit to the L.C.C. Exhibition, "London—the Next Twenty Years," at County Hall, before it closed last week. The party was received and shown round by the L.C.C. Architect, Mr. Robert Matthew, C.B.E., A.R.I.B.A., and members of his staff, and was afterwards entertained to sherry.

Thanking Mr. Matthew for his courtesy in explaining so graphically the purpose of the Exhibition, which, he said, admirably fulfilled its object, the President, MR. WOODBINE PARISH, congratulated him on the efficient way in which he summarised the mass of detail which had gone to the making of the L.C.C. plan, and wished him well when the plan goes before the public inquiry into it, due to start in June.

Donation to B.B.I.

THE L.M.B.A. has sent a donation of £26 5s. to the Builders' Benevolent Institution. The President of the B.B.I. this year is Sir Albert Braithwaite, D.S.O., M.C., M.P. for Harrow West.

NEWS IN BRIEF

R.I.B.A. Prizes and Studentships

A pamphlet containing full information on the various R.I.B.A. prizes and studentships for 1952-53, together with, where applicable, the detailed programmes for the competitions, has been issued by the Institute's Board of Architectural Education. It is priced at 2s. 6d.

Spillers' Laboratory, Cambridge

In the article illustrating Spillers' Laboratory, Cambridge, which appeared in *The Builder* dated March 28, the surrounds to the windows and doors were described as being of cream-glazed terra-cotta. They are, in fact, cream-glazed cast stone and are the work of Emerson and Norris, Ltd., of Brentford.

Manchester Rehousing Scheme

When negotiations have been completed between Manchester City Council and local authorities in Cheshire, it is proposed to build dwellings in Sale and Handforth for 15,000 people now living in Manchester; 2,878 houses are proposed to be built at Sale and 1,460 at Handforth. A further 1,400 houses are contemplated at Whitefield and 1,000 at Heywood and Bury.

Cost "Drowning" House Buyers

Councillor Matthew Larmour (Labour) said at last week's meeting of Grimsby Town Council that, by approving price increases to builders of private houses under licence, the Corporation would "drown" would-be property owners in high prices.

Councillor Larmour had unsuccessfully tried to send back for further consideration a proposal to grant a price increase from 29s. 3d. to 33s. per super foot.

The recommendation, which was adopted, also made provision for an increase from 34s. to 37s. 6d. a super foot for bungalows.

Electricians' Examination

For many years, according to the Electrical Contractors' Association, courses have been held at the principal technical colleges throughout the country for electrical installation work in conformity with the syllabus of the City and Guilds of London Institute. The full course consists of two parts, and for both of these certificates are issued by the City and Guilds of London Institute as interim certificates on the results of the examinations. These interim certificates can be changed at a later date for full certificates on the holders of such certificates filling in application forms which show the scope of their practical experience since they have been working as fully qualified electricians. The E.C.A. point out that these full certificates are very much more valuable than the interim certificates to a prospective employer, as they indicate the satisfactory practical experience as well as the theoretical knowledge of the electrician. The forms can be obtained from the City and Guilds of London Institute.

Dates for Viewing M.o.W. Property

The Ministry of Works announces that the state rooms and grounds of Audley End House, Saffron Walden, Essex, will be open to the public on April 5. Visiting days are Thursdays, Saturdays, Sundays and Bank Holidays, from 9.30 a.m. to 5.30 p.m., and admission price is 1s. The Ministry also announce that the historic gardens at Wiest Park, Silsoe, Bedfordshire, will reopen on April 5. Visiting days are Saturday and Sunday, from 2 p.m. until dusk, and normal admission price is 6d.

People's Houses, Eastcote

Following its use on new housing schemes in the Birmingham area, "Syndura Grade E," a flat wall paint manufactured by Fleetwood Paints, Ltd., was used both externally and internally to decorate the Wimpey demonstration "People's" houses which were completed recently at Eastcote. The manufacturers of this paint state that because it is resistant to alkali it may be applied direct to new surfaces such as plaster, concrete, cement, asbestos, etc. When applied to porous surfaces, it prevents the formation of condensation. It was, they claim, successfully applied to new lime plaster walls of the Eastcote houses.

Repair of Oxford Colleges

After the recent agreement of the Ministry of Works to allow much-needed repairs to stone masonry to be carried out, Oxford colleges have now been given their building licence allocations and have decided what work to do. About £25,000 is to be spent on the main tasks. Among the emergency projects, states *The Times*, are the repair of the Parks-road front of Wadham and and repairs on the north side of Tom Quad at Christ Church. Wadham will also have the north face of the college refaced, and Christ Church will probably use the rest of its allocation to begin refacing the library, on work in Canterbury Quad, and on replacing battlements and carvings in Tom Quad. The biggest project will be the refacing of the south front of the Fellows' building in Corpus Christi College. Pembroke's building allocation will permit repairs to the tower to be continued, and the allocation for Brasenose will have a place in a 10-year programme. Queen's College will be able to repair the back quad, and Worcester the north face round the Provost's lodgings. Lincoln also received a building allocation.

PERSONAL COLUMN

MR. CHARLES MACDONALD, for many years contracts manager of Wailes Dove Bitumastic, Ltd., has been appointed to the board of directors.

THE DIRECTORS of the Federated Employers' Insurance Association, Ltd., have announced that at a board meeting on March 28 last, MR. GUY G. LAWRENCE was re-elected chairman of the Association for the ensuing year.

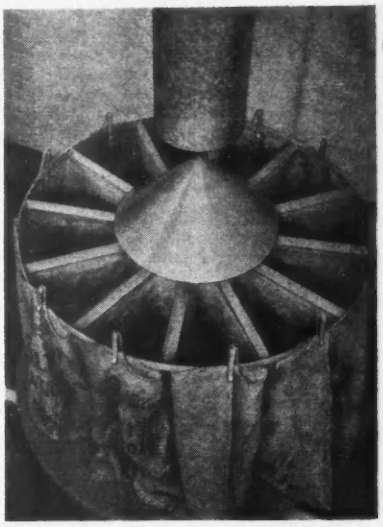
MR. FELIX L. LEVY, a director of George Cohen, Sons and Co., Ltd., has been elected President of the London and Southern Scrap Iron and Non-ferrous Metal Merchant's Association.

ellicem
TENACIOUS CEMENT COATING
for
PROTECTIVE DECORATION
internal & external
Cecil Kay
THE ADAMITE COMPANY LIMITED
MANFIELD HOUSE, STRAND, W.C.2

TRADE NEWS

Multi-bagging Attachment

To overcome the problem of choking of outlets during the handling of granular materials, Dallow Lambert and Co., Ltd., have produced equipment which, they claim, requires the minimum of attention. The



equipment comprises a steel cone mounted centrally on an iron framework which is divided with twelve sections and supported on a circular metal fabricated base with castors. The equipment is placed under the discharge outlet and the material is evenly distributed to each of the sacks. The sacks may be emptied by moving the equipment to one side.

Roof Felt: Price Reduction

The Ruberoid Co., Ltd., 1, New Oxford-street, W.C.1, have announced a reduction in price of their Pluvex roof felt.

Safety Requirements of Electric Fires

The General Electric Co., Ltd., Magnet House, Kingsway, W.C.2, has decided, in the interests of public safety, to make all fires manufactured by the company conform to the new B.S. 1670:1951, which sets out the safety requirements of electric fires.

Examination Awards

A total of 167 cash awards, amounting to over £1,500, were made during 1951 to employees of the Dunlop Rubber Co., St. James House, St. James'-street, S.W.1. The awards were given under the company's education scheme for successes in a wide range of examinations, including the National Certificate in Building; the City and Guilds Final Examinations on heating and ventilating engineering; and sanitary and domestic engineering.

Plastic Cistern Float

The Plastics Division of E. K. Cole, Ltd., Ekco Works, Southend-on-Sea, Essex, in co-operation with United Merchants, Ltd., has produced a cistern float which, it is claimed, is unaffected by continuous immersion in cold water and low temperature conditions. The Ekco/Unimer float, moulded in Polystyrene, is manufactured in 4-in. and 4½-in. sizes. Both sizes have a 5/16th-in. whitworth thread for connection to the arm of the ball valve.

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchant's warehouse will necessarily be higher so as to include the stocking and handling co ts involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	0	1
Pit Sand	,,		19	5
Washed Sand	,,	1	1	1
¾ in. Shingle	,,		17	11
¼ in. Broken Brick	,,		19	3
Pan Breeze	,,		9	6
Fine or Coarse Foamed Slag Aggregate	per ton	2	16	10

CEMENT, etc.

Including jute sacks or non-returnable paper bags.

Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site	,,	4	19	9
1 to 6 tons, site	,,	5	8	9
Ferrocrete Rapid Hardening Cement in 6-ton loads and upwards to site	,,	5	7	9
1 to 6 ton. do. site	,,	5	16	9
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots ...	,,	7	1	3
Other colours according to colour				
In 4-ton lots from 196s. 3d. to 420s. 3d. per ton.				
White Portland Cement	,,	12	17	3
Under 1 ton	per cwt.		15	3
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	12	3
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £8 18s. 9d. to £10 12s. 3d. (1-ton loads and upwards).				
Lightning and Cement Fondu Brands High Aluminous cement, 1-ton lots and up	,,	14	19	6
White Keen's or Parian Cement in 1-ton loads ...	,,	9	19	3
Pink Keen's or Parian Cement in 1-ton loads ...	,,	9	14	0
Stourbridge Fireclay, 6-ton loads at Rialway Depot, London	,,	6	6	0

BRICKS

Full Loads.				
First Hard Stocks	per 1,000	10	3	0
Second Hard Stocks	,,	9	13	0
Mild Stocks	,,	8	8	0
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2¾ in. Nominal Fletton Bricks to sites in W.C. District. Commons	,,	5	5	3
Cellular do.	,,	5	5	3
Keyed do.	,,	5	7	3
Rustics do.	,,	6	10	3
Cellular Rustics do.	,,	6	10	3
Single Bullnose do.	,,	6	5	3
Sandfaced do.	,,	7	5	3
Cortex Facing Bricks	,,	6	0	3
Best Blue Pressed Staffs (London Stations) ...	,,	22	14	0
Do. Bullnose (London Stations)	,,	23	8	6
Blue Wire Cuts (London Stations)	,,	20	7	0
Midhurst Lime Bricks (London Sites)	,,	9	5	0
Uxbridge Whites (London Sites)	,,	7	10	0
2¼ in. Best Stourbridge Fire Bricks (London Stations)	,,	20	18	6
3 in. do. (London Stations)	,,	25	4	0
2¾ in. Machine-made Sandfaced Red Facings (London Sites)	,,	12	12	0
2¾ in. Machine-made Multi Red Facings (London Sites)	,,	12	17	0
2¾ in. Hand-made Sandfaced Red Facings (London Sites)	,,	13	16	0
2¾ in. Hand-made Sandfaced Multi Colour Facings (London Sites)	,,	13	16	0
2¾ in. Surrey Clamp Burnt Multi Stock Facings (London Sites)	,,	12	9	0
2⅝ in. Surrey Kiln Burnt Multi Stock Facings (London Sites)	per 1,000	13	2	6
Glazed Bricks (London Stations), White, Ivory, Brown—				
Stretchers	,,	40	0	0
Headers	,,	39	10	0
Quoins, Bullnose and 4½-in. Flats	,,	50	0	0
Double Stretchers	,,	53	0	0
Double Headers	,,	48	10	0
One side and two ends	,,	54	10	0
Two sides and one end	,,	56	0	0
Splays and Squints	,,	52	0	0

Second quality £2 less than Bests. Cream and Buff £2 extra over White. Other colours, hard glaze, £5 10s. 0d. extra over White. All above plus 55 per cent. for Bests and plus 50 per cent. for Second quality. Plus delivery to site 30s. per 1,000.

PARTITION SLABS, etc.

Delivered Central London Area.

HOLLOW CLAY PARTITION BLOCKS (Keyed)

	Minimum lorry loads			s.	d.
2 in.	150 yds.	per yd. sup.	4	1	
2½ in.	135 yds.	,,	4	4	
3 in.	125 yds.	,,	4	10	
4½ in. (3 cavity) ...	95 yds.	,,	6	3	
4½ in. (6 cavity) ...	80 yds.	,,	6	11	

Half blocks add 1s. per yd. super to above prices.

CLINKER CONCRETE

2 in.	,,	3	0½	
2½ in.	,,	3	7	
3 in.	,,	4	1½	
4 in.	,,	5	3	

CRANHAM

2 in.	,,	5	3	
2½ in.	,,	5	9	
3 in.	,,	6	9	
4½ in.	,,	8	3	
4¼ in. Load bearing quality	,,	9	3	

FLOOR BLOCKS

3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads	per 1,000	29	14	0
4 in. do.	,,	32	13	0
5 in. do.	,,	37	3	0
6 in. do.	,,	44	2	0
7 in. do.	,,	50	19	0
8 in. do.	,,	58	3	0

STONEWARE DRAIN PIPES

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons.	Over 100 Pieces under 2 tons.	Under 100 Pieces under 2 tons.
Best Quality ...	+62½%	+82½%	+92½%
B.S.S. Best do.	+10⅝% +62½%	+10⅝% +82½%	+10⅝% +92½%
Tested Quality	+37½% +62½%	+37½% +82½%	+37½% +92½%
B.S.S. Tested do.	+47½% +62½%	+47½% +82½%	+47½% +92½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths) ...	per 1,000	8	4	6
4 in. do.	,,	19	13	0
6 in. do.	,,	22	2	0

STONE

Bath Stone—			
Monks Park	per ft. cube		6 7
St. Aldhelm Box Ground	,,		7 7
Delivered in railway trucks at South Lambeth, B.R., Western Region.			
Doulting Stone Random Blocks. Delivered London area	,,		7 4
Beer Stone. Delivered London area	,,		6 11
Portland Stone—			
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B R., Southern Region	,,		7 4
Hopton-Wood Stone—			
F.O.R. Quarries, Wirksworth, Derbyshire—			
¾ in. Slabs for wall lining, sawn two sides in random sizes up to 5 ft. and not over 15 ft. super in area	per ft. sup.		7 2
1¼ in. Slabs for paving, sawn two sides as above described	,,		9 11
Yorkshire Stone—Blue Robin Hood Quality. Delivered to site London in 6-ton lots.			
9 in. × 3 in. Rubbed, weathered, throated and stooled cills	per ft. cube	2	19 6
12 in. × 6 in. do. do.	,,	2	2 3
12 in. × 3 in. Plain coping, twice throated ...	,,	1	12 6
12 in. × 3 in. Weathered and twice throated coping	,,	2	3 6
14 in. × 6 in. do. do.	,,	1	19 0

STONE—continued

	£ s. d.
4½ in. × 9 in. Plinth, rubbed on top and face ... per ft. cube	1 15 0
3 in. sawn two sides Slabs, random sizes ... per ft. sup.	6 3
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ... per ft. cube	1 1 6
Do. do., fair one edge for fair faced brickwork ... ... ,,	1 5 6
Hard York—	
12 in. × 2 in. Square Steps, rubbed on top and edge per ft. run	7 6
14 in. × 3 in. Round-nosed Steps, rubbed on top and front ... ... per ft. cube	2 0 0
12 in. × 6 in. Plain Steps, rubbed top and front ... ,,	1 15 3
2 in. Rubbed and Jointed Paving, given sizes ... per ft. sup.	7 3
2 in. Sawn Paving, edges squared, in random sizes per yd. sup.	2 9 3

TILES and PANTILES

Delivered London area by road in 6 tons or over per 1,000

Machine made Pantiles and French pattern Tiles from Lincolnshire district	26 10 0
Hand made Pantiles Berkshire district	40 10 0
Hand made Double Roman Bridgwater district	52 4 3
Hand made 10½ × 6½ tiles Berkshire district	12 2 0
Machine made 10½ × 6½ Staffordshire district	12 4 0
Hand made Hip and Valley tiles per doz.	1 6 0
Machine made Hip and Valley tiles do.	1 3 9
Concrete tiles 10½ × 6½	6 10 6
do. Interlocking (49S)	17 11 0

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

24 × 12	96 7 6
22 × 12	82 10 0
22 × 11	74 10 6
20 × 12	69 17 0
20 × 10	65 10 6
18 × 10	48 10 9
18 × 9	43 9 0
16 × 10	42 12 6
16 × 8	33 8 3

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—

Joinery quality ... ... Ex Wharf per standard	£130 to £135
Carcassing quality ... ... do. ,,	£115 to £120
1 in. Tongued and Grooved Flooring do ,,	£123 10 0

Hardwood—

Mahogany—African S.E.	...	per ft. cube	1 10 0
do. Honduras do.	...	,,	2 15 0
Oak European do.	...	,,	2 0 0
do. Japanese do.	...	,,	1 17 6
do. English Logs sawn	...	,,	1 5 0
Teak 8 in. average S.E.	...	,,	3 0 0
Walnut African Logs sawn	...	,,	1 7 6

DOORS (in Lots I—II)

Delivered London area.

1¾ in. 4 Horizontal Panel. Pattern 4 in deal	
2 ft. 0 in. × 6 ft. 6 in. ... ... each	1 13 9
2 ft. 3 in. × 6 ft. 6 in. ... ... ,,	1 14 9
2 ft. 6 in. × 6. ft. 6 in. ... ... ,,	1 15 9
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	1 18 3
2 in. do., but top panel open. Pattern 4 × G in deal	
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	2 18 9
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	3 2 6
2 in. 2 Panel, top panel open. Pattern 2 × G in deal	
2 ft. 6 in. × 6 ft. 6 in. ... ... ,,	2 8 9
2 ft. 9 in. × 6 ft. 6 in. ... ... ,,	2 11 9

SUNDRIES

Delivered London area.

1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton) ... ... per yd.	5 10
1½ in. do. (67 yds. to 1 ton) ... ,,	7 6
2 in. do. (52 yds. to 1 ton) ... ,,	9 2½
2½ in. do. (45 yds. to 1 ton) ... ,,	10 9
3 in. do. (39 yds. to 1 ton) ... ,,	11 11½
Quantities under 1 ton add 1d. per ½ in. of thickness.	
½ in. Imported Insulation Board, quantities over 5,000 sq. ft. per 100 sq. ft.	2 10 0
¼ in. Hardboard do. ... ... ,,	2 19 6
⅛ in. do. do. ... ... ,,	4 2 3
⅛ in. Asbestos Flat Building Sheets ... ... per yd. sup.	2 3
Roofing Felt, 1-ply ... ... ,,	1 6
do. 2-ply ... ... ,,	1 9
Best Scotch Glue, in slabs ... ... per ½ cwt.	5 0 0
do. pearl ... ... ,,	5 5 0
Croid Glue ... ... 28 lb.	2 5 0
Cut Nails, 3 in. and up (1-ton lots) ... ... per ton	59 15 0
Wire Nails, 3 in. and up (4-cwt. lots) ... ... per cwt.	2 13 6

METALS

STEEL JOISTS, ETC.

Basis Joists—

6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in., 12 in. × 6 in. plain, cut to lengths delivered London area ... ... per ton	36 0 0
Extra for sizes	
3 in. × 1½ in. ... ... ,,	3 10 0
3 in. × 3 in., 4 in. × 3 in., 5 in. × 2½ in. ... ,,	1 5 0
4 in. × 1½ in. ... ... ,,	3 0 0
4½ in. × 1½ in., 24 in. × 7½ in. ... ... per ton	2 0 0
5 in. × 3 in., 22 in. × 7 in. ... ... ,,	1 0 0
6 in. × 3 in. ... ... ,,	1 10 0
9 in. × 7 in. ... ... ,,	5 0
10 in. × 4½ in., 12 in. × 5 in. ... ... ,,	15 0
5 in. × 4½ in., 6 in. × 4½ in., 7 in. × 3½ in., 7 in. × 4 in., 8 in. × 4 in., 9 in. × 4 in., 10 in. × 5 in., 10 in. × 8 in., 12 in. × 8 in., 13 in. × 5 in., 14 in. × 5½ in., 14 in. × 6 in., 14 in. × 8 in., 15 in. × 5 in., 15 in. × 6 in., 16 in. × 6 in., 16 in. × 8 in., 18 in. × 6 in., 18 in. × 7 in., 18 in. × 8 in., 20 in. × 6½ in., 20 in. × 7½ in. ... ... ,,	10 0
Steel angles average price ... ... ,,	37 5 0
Steel tees average price ... ... ,,	38 5 0
Fabricated work delivered London—	
R.S. Joists cut and fitted ... ... ,,	50 0 0
Compound girders ... ... ,,	55 0 0
Stanchions ... ... ,,	60 0 0
Compound stanchions ... ... ,,	63 0 0
In Roof Work—Trusses and Purlins ... ... ,,	75 0 0
Average prices not for awkward work.	
Mild Steel Ferro-Concrete bars to BSS785 ex London	
Stock ¾ in. diam, and upwards ... ... ,,	36 2 6
¼ in. diam ... ... per ton extra	3 12 0
⅜ in. do. ... ... ,,	2 17 0
⅜ in. do. ... ... ,,	2 2 0
½ in. do. ... ... ,,	1 7 0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts—

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A +10%		
Class B +19½%	Light +23½%	Malleable List −45½%+40%
Class C +36½%	Heavy +31½%	
Black—		
Class A −23½%		
Class B −13%	Light +6½%	Malleable List −45½%
Class C NET	Heavy +13½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yard in 6 ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	2/10	2/6	/8
3½ in.	3/2	2/10	/8
4 in.	4/-	3/-	1/2
4½ in.	4/4	3/6	1/4
5 in.	5/-	3/10	1/6

C.I. O.G. GUTTERS

3 in.	3/8	3/4	/10
3½ in.	4/2	3/4	1/2
4 in.	4/6	3/6	1/4
4½ in.	5/-	4/-	1/6
5 in.	5/4	4/8	1/8

C.I. RAIN-WATER PIPES

Per yard in 6 ft. lengths	Pipes	Bends	Branches
2 in.	5/10	3/-	4/6
2½ in.	6/2	3/6	5/4
3 in.	6/10	4/4	6/6
3½ in.	7/10	5/2	7/6
4 in.	9/-	6/2	9/-

L.C.C. COATED SOIL PIPES

2 in.	7/-	5/4	6/6
2½ in.	7/4	6/-	8/-
3 in.	8/2	6/6	9/8
3½ in.	9/2	8/-	11/2
4 in.	10/6	9/-	13/-

Above prices for gutters, rain-water and soil pipes for under 3 cwt. lots only. Lots over 3 cwt. see List No. 3100 amended to August 13, 1951, plus 100 per cent. and tonnage allowance. 4-ton lots 5 per cent. 2-ton lots 2½ per cent.

L.C.C. COATED DRAIN PIPES

In 9 ft.	cwt. qr. lb.	per yd.	Bends	Branches
4 in.	1 1 17	18/10	13/-	22/11
6 in.	2 0 1	28/1	27/1	46/11

ASBESTOS RAIN-WATER PIPES AND FITTINGS

Orders under £30 less 12½ per cent. discount.
Orders over £30 less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6 ft. lengths ...	per yd.	3/2	3/7½	4/2½	5/10
Shoes	each	2/-	2/3	2/8½	4/-
Single Branches	,,	3/3	4/-	4/10	6/8
Bends square or obtuse ...	,,	2/3	2/7½	3/3	4/8
Swan Necks 4½ in. or 6 in. projection	,,	2/9½	3/7	3/10½	5/8

ASBESTOS O.G. GUTTERS AND FITTINGS

		4 in.	4½ in.	5 in.	6 in.
Gutters 6 ft. lengths ...	per yd.	3/3	3/7	4/2½	5/2½
Drop ends	each	2/3	2/4	2/7½	3/3
Stop Ends...	,,	/8½	/9½	/11	1/1
Angles and nozzles ...	,,	2/8½	3/-½	3/7	4/2½
Union Clips	,,	1/5½	1/9	2/-	2/5

ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6 ft. lengths	per yd.	2/3	2/8½	2/9½	3/3	4/7
Drop ends ...	each	1/3	1/10½	1/11½	2/3	2/9½
Stop ends ...	,,	/7½	/8½	/9½	/11	1/1
Angles and nozzles	,,	2/-½	2/3	2/8½	2/9½	4/-
Union Clips ...	,,	-/11½	1/-½	1/2	1/4	1/11

METALS—continued

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	40 0 0
Mild Steel Bars	35 1 0
Mild Steel Hoops	36 8 6

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft sheets C.R. and C.A.—	
20 gauge	42 9 0
24 gauge	43 14 0
26 gauge	44 14 0
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	55 4 6
24 gauge	57 4 6
26 gauge	59 19 6
Galvanised Flat sheets C.R. and C.A.—	
20 gauge	56 4 6
24 gauge	48 5 6
26 gauge	60 19 6

Metal Windows—Standard Metal Windows B.S. 940 Prices on application British Metal Window Manufacturers' Association, Ltd

Plumbers' Brass Work, Copper, Zinc, etc
Delivered in London area

	All per doz.	M.O.H. ½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron		86/3	132/-				
Toilet bib cocks for iron ...		135/-	182/6				
Screw down stop cocks for iron		86/-	120/-	186/-	368/-	548/-	941/-
do with two unions for lead		124/-	165/-	263/-	488/-	703/-	1253/-
Double nut boiler screws ...		26/-	32/-	55/-	83/-	128/-	202/-
Heavy Croydon ball valves ...		226/-	348/-	481/-	732/-	903/-	
Plumbers union brass lead to iron		23/-	33/-	41/-	72/-	96/-	190/-
		1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws		29/-	35/-	50/-	92/-	120/-	130/-
Brass sleeves			31/-	42/-	72/-	87/-	109/-
			1½ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb	
Lead P. trap with brass cleaning screws			80/6	100/6	161/-	275/-	
Lead S. trap do.			97/3	120/9	198/-	355/3	

Solder	s. d.
Plumbers' ... ... per lb.	4 6
Tinmen's ... ... ,,	5 6
Blow pipe ... ... ,,	5 8

Copper tubes BSS 659/1944 on the basic price of 26d. per lb., plus gauge and manufacturing extras as follows. Minimum quantities 3 cwt.

	Extra d.		d.
½ in. × 19 gauge	14⅔	Total per lb.	40⅔
¾ in. × 19 ,, ...	13½	,, ,,	39½
1 in. × 18 ,, ...	11⅔	,, ,,	37⅔
1¼ in. × 18 ,, ...	11¼	,, ,,	37¼
1½ in. × 18 ,, ...	11¼	,, ,,	37¼
2 in. × 17 ,, ...	12¼	,, ,,	38¼

	£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras ... ... per ton	280 0 0
Sheet Zinc 10 gauge, 5 cwt. lots upwards ... ... per cwt.	12 5 6
do. 12 gauge do. ... ... ,,	12 3 6
Brass tubes basic price, plus gauge and manufacturing extras ... ... per lb.	2 1½

LEAD SHEET AND PIPE

Basis selling price in minimum one ton delivery to one address in London or Home Counties.

	£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards per ton	187 0 0
Lead Water Pipe in coils ... ... ,,	188 5 0
Lead Soil Pipe, 10 ft. or over, 2 in. to 4½ in. dia. ... ,,	191 5 0
Lead Gas or Untinned Compo pipe ... ... ,,	189 15 0
Extras over Basis for quantities under 1 ton	
5 cwt. and under 1 ton ... ... per cwt.	2 0
3 cwt. do. 5 cwt. ... ... ,,	4 0
1 cwt. do. 3 cwt. ... ... ,,	6 0
28 lb. do. 1 cwt. ... ... ,,	8 0

Cutting Sheet Lead to size less than 15 ft. long and/or less than 7 ft. wide and under 3½ lb. substance, or cutting Lead Pipe at usual Trade extras.
Allowance for Old Lead, collected, £141 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

	£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site per ton	7 4 6
do. White do. do. ... ... ,,	7 12 3
Sirapite Coarse do. do. ... ... ,,	7 7 9
do. Fine do. do. ... ... ,,	7 15 9
Blue Lias Lime in 6-ton loads ... ... ,,	6 17 3
Hydrated Lime do. ... ... ,,	5 13 6
Lump Lime do. ... ... ,,	4 14 6
Granite Chips do. ... ... ,,	2 4 6
Hair ... ... per cwt.	4 17 6
Gypsum Plaster Lath on Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site ... per yd.	2 4
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery. Delivered site ... ... ,,	2 7

PAINT AND DISTEMPER

	£ s. d.
Delivered London area.	
Ceiling Distemper ... ... per cwt.	1 12 0
Washable Distemper ... ... ,,	5 12 0
Gloss Paint ... ... per gal.	2 15 0
Snowcem cement paint (in 1 cwt. drums) ... ... per cwt.	3 11 0
Lead Products and Oils	
Ground White Lead 5 cwt. casks ... ... per cwt.	10 9 0
1 cwt. kegs ... ... ,,	10 16 0
Genuine White Lead Paint, 20 gal. lots in 1 gal tins per gal.	3 7 0
Genuine Red Lead, Dry, 1 cwt. keg ... ... per cwt.	9 13 6
Genuine Linseed Oil Putty, 1 cwt. keg ... ... ,,	3 0 6
Size XD quality, 28 lb. ... ... per tin	9 0
Raw Linseed Oil (5 gal.) Drums extra ... ... per gal.	1 0 0
Boiled Linseed Oil (5 gal.) ... do. ... ... ,,	1 0 6
Sundries	
Turpentine substitute (5 gal.) do, ... ,,	5 7½
do. do. (40 gal. drum) do. ... ... ,,	4 9½
Solignum, Brown (5 gal. cans), Exterior ... ... ,,	6 6
Creosote (40 gal. barrels) ... ... ,,	1 8
Paste Powder (1 lb. packets) ... ... per lb.	1 6
White Lining Paper ... ... per piece	2 0

VARNISHES, etc.

	£ s. d.
Delivered London area.	
Oak Varnish, Outside or Inside ... ... per gal.	1 10 0
Oak Pale Copal do. ... ... ,,	1 12 6
Hard Drying Oak for Inside ... ... ,,	1 15 0
Crystal Paper Varnish do. ... ... ,,	1 15 0
Eggshell Flat Varnish do. ... ... ,,	2 2 6
Finest Carriage Varnish ... ... ,,	2 2 6
Front Door Varnish ... ... ,,	1 17 6
Japan Gold Size ... ... ,,	1 10 0
Black Japan ... ... ,,	1 5 0
Brunswick Black ... ... ,,	1 0 0
Berlin Black ... ... ,,	1 5 0
Terebine ... ... ,,	1 5 0
Knotting (1 gal. bottles extra) ... ... ,,	2 0 0
French and Brush Polish (do.) ... ... ,,	1 13 0

GLASS

Delivered London area.
Sheet Glass, Ordinary Glazing Quality. Cut sizes.

	s. d.
18 oz. ... ... per ft. super	4½
24 oz. ... ... ,, ,,	6
26 oz. ... ... ,, ,,	7½
32 oz. ... ... ,, ,,	10½
English Rolled Plate and Figured Cathedral, etc., in cut sizes, over 500 ft. super of all kinds	
Rolled Plate ¼ in. ... ... ,, ,,	7½
Rough cast ⅜ in. ... ... ,, ,,	9
Rough cast ½ in. ... ... ,, ,,	9
Figured Rolled, and Cathedral standard patterns ,, ,,	7½
Figured Rolled, Standard Tints ... ... ,, ,,	1 3½
Figured Rolled Special Tints ... ... ,, ,,	2 7½
Figured Rolled Real Ruby ... ... ,, ,,	3 11½
Reeded, Broad Reeded, Cross Reeded and Major Reeded ¼ in. thick ... ... ,, ,,	11
Wired cast, ¼ in. thick ... ... ,, ,,	10½
Georgian Wired cast ... ... ,, ,,	10½

Hollow Glass Blocks—			s. d.
P.B. 2	5½ × 5½ × 3½ in.	each	2 6
P.B. 3	7½ × 7½ × 3½ in.	,,	3 10
P.B. 32	7½ × 7½ × 3½ in.	,,	3 10
Radiused Corner Brick to match up with—			
P.B. 2	... ...	,,	4 6
P.B. 3	... ...	,,	6 0
P.B. 32	... ...	,,	6 0

Plate Glass.

	Polished Plate Glass. Ordinary substance about ¼ in. thick per ft. super. Glazing for Glazing purposes s. d.	Selected Glazing Quality s. d.	Silvering Quality s. d.
In plates not exceeding—			
2 ft. sup.	3 2	3 8	4 5
5 ft. sup.	3 10	4 5	5 3
45 ft. sup.	4 5	5 0	6 0
100 ft. sup.	4 9	5 9	7 6

Extra sizes, i.e., Plates exceeding 100 ft. sup. or 96 in. high or 160 in. wide.

	Glazing for Glazing purposes per ft. sup. s. d.
Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways	7 4
180 ft. sup. or ,, ,,	10 0
200 ft. sup. or ,, ,,	14 0

Plates exceeding 200 ft. sup., prices on application.
The usual thickness of Polished Plate is about ¼ in., but if required in the following special thicknesses in Glazing for Glazing quality the undermentioned extra charges will be made :—

⅛ in.–$\frac{5}{32}$ in. ⅛ in.–$\frac{1}{16}$ in. ¼ in. bare ¼ in. exact $\frac{1}{16}$ in.–⅛ in. ⅛ in. exact	6d. per ft. super
$\frac{1}{16}$ in.	no extra charge

The Builder

CURRENT RATES OF WAGES

AS FROM FEBRUARY 4, 1952. **(Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.)**

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	3/4½	3/4	3/3½	3/3
Labourers	2/11	2/10½	2/10	2/9½

Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone (parts of)	A1
Aylesbury	A2
Aylesby (Yorks)	A
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A1
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D. (exc. Willough-by-on-the-Wolds A2)	A
Basingstoke	A1
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick District	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U. D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A2
Breconshire, County of	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A1
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty.of	‡A2
Carnarvonshire, Cnty of	‡A3
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A1
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippen-ham Within and Harden-huish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A2
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A1
Dorset, County of (except-ing Poole and Wimborne A1)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A1
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A1
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A1
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough R.D. (Mid. pt.)	A2
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D. (part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M.B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A2
Letchworth	A1
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A2
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A2
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough	A1
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
,, Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stonevards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A1
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A1
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A2
Swansea	A
Swindon	A1
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
,, North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington R.D.	A1
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Willington	A
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A3
Windsor and Eton	A1
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

* For Birkenhead, Liverpool, and London the rates are:—Craftsmen, 3s. 6d.; Labourers, 3s. 0½d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 3s. 5½d. Labourers, 3s. 0d. † Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters, Joiners and Plumbers in all towns and districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 2s. 5d. per hour. Women introduced to carry out work other than craft processes, 2s. 1d. per hour.

For Building Trade Wages in Scotland see page 536

THE SCOTTISH BUILDER

Commerce and Planning

UNDULY ambitious planning schemes can have little hope of realisation and may be seriously detrimental to the orderly and systematic advances which are desirable in Edinburgh, is the opinion expressed in a memorandum drawn up by the Edinburgh Chamber of Commerce. The memorandum has been submitted to the Edinburgh Corporation.

The memorandum urges that planning, in whatever form it may ultimately be adopted, should be based upon practicable realisation and to this end should envisage financial considerations which would avoid great variations in annual expenditure.

The Chamber submits the view that rather than endeavouring to replan the city with major alterations at very great expense certain portions with industrial, commercial, historical or cultural associations should be earmarked, and transport schemes should not be allowed which would involve wholesale demolition for purposes of rapid transport or for symmetrical layout.

Three main points made are: That established factories, workshops and institutions, should be given reasonable facilities for the improvement or expansion of their existing premises, where these cannot readily or suitably be transferred elsewhere, and when they do not conflict with orderly developments; that new industries should be encouraged on an industrial estate which should be laid out in a suitable geographical position within the city; and that plans should provide for a growth of 10 per cent. in the industrial population of the capital during the next 25 years. The memorandum adds that sufficient evidence has accumulated to show the very great advantages accruing from the establishment of industrial estates.

The Edinburgh Merchant Company has appointed a committee to consider certain aspects of the proposed Development Plan for Edinburgh, which the Corporation is preparing for submission to the Secretary of State in accordance with the Town and Country Planning (Scotland) Act, 1947. The Master of the company states that any such plan whether all its provisions are eventually given effect to, or not, is bound to have serious repercussions on numerous businesses in the city. While as a company they welcome a plan that would prevent any unsightly and unreasonable development, he thought they had a duty as representing a large number of the important businesses in the city to see that the plan is not unduly restrictive of commercial development.

Glasgow's Building Exhibition

SCOTLAND'S YOUNG BUILDERS are exhibiting examples of their skill and craftsmanship at a Building and Civil Engineering Exhibition in the Kelvin Hall, Glasgow, which remains open until April 12.

Apprentices and building students of all the leading technical colleges and schools of building have combined in producing what has been described as "the biggest demonstration of student craftsmanship which has ever been shown in Scotland."

During the run of the exhibition the youthful craftsmen will produce examples of their work. One important section shows the comprehensiveness of the training of the modern civil engineer. Working models include a 12-ft. wind tunnel, showing the effect of wind on bridge sections and a 10-ton machine for testing the compression strength of mild steel.

Another section is devoted to the work of schools of architecture in Scotland, as well as showing the work of the practising members of the Royal Incorporation of Architects.

Scottish Housing Subsidies

DETAILS of the subsidies proposed for Scotland are given on page 528.

A "Self-help" Building Association

FIFTY HOUSES are to be built in Edinburgh with spare-time labour by a newly formed housing association, subject to final approval by Corporation's Housing Committee.

Members of the 50-strong association include four bricklayers, four electricians, five joiners, one blacksmith, three plumbers, one painter, and one fireplace builder. The rest of the members, who include clerks and teachers, will act as labourers.

The association's intention is to take an initial payment of £30 from each member to enable plant to be bought and building to proceed to a stage where a loan might be obtained. A full-time clerk of works and architect will be employed. The houses will be of three and four apartments of the terraced cottage type.

A promise has been received by the association of 16,000 bricks per month along with other materials, and each member has pledged to put in 20 hours work per week. It is hoped that the scheme, once sanctioned, will be completed in two years. The Government, and not the local authority, subsidy will be sought. The houses will, when completed, remain the property of the association and will be let to members.

Congregation Build Church

VOLUNTEER WORKERS—men, women and children—members of Prestonpans Episcopal Church, East Lothian, are building their own church. For 40 years, worship has taken place in a wooden erection and now to the plan of Mr. F. R. Stevenson, A.R.I.B.A., the volunteer workers including miners are to replace the wooden outer walls piece by piece with stone. There is no mason in the congregation, but Mr. Stevenson is instructing members in the treatment of the stone which has been obtained from local houses that are being demolished. The building will be roofed with pantiles which have been donated.

The estimated cost of materials is £150.

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SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from February 4, 1952. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 3s. 4½d.; Labourers, 2s. 11d.

For apprentices, the rates are :

Year.	Percentage of Craftsman's rate.	For week of 44 hours.
		s. d.
1st	25	37 1½
2nd	33⅓	49 6
3rd	50	74 3
4th	66⅔	99 0
5th	75	111 4½

For female labour, the rates are:

	s. d.
Operatives on craft operations (at end of probationary period)	2 11
Operatives on labouring operations (at end of probationary period)	2 7½

Furniture Competition Awards

A FIRST-CLASS AWARD of £70 was won by Mr. George M. H. Richardson in the competition for hand-made furniture by Scottish craftsmen organised by the Council of Industrial Design Scottish Committee which was judged in Glasgow on March 24. Two second-class awards were made by the judges to the entries submitted by Miss Elizabeth C. McCaig and Mr. J. Connel Pringle.

NEW BUILDINGS

Aberdeen.—Corporation has approved the reconstruction work to be carried out at The Rosemount junior secondary school at an est. cost of £129,500, and at Hanover-st. primary school at £42,107. Alexander B. Gardner (F.), Corporation Offices, Bread-st., The Castlegate, Aberdeen.

Bo'ness.—T.C. to erect 40 houses and four shops at Mardenpark and eight houses at Grangepans.

East Lothian.—Group Board of Management, Roodlands General Hospital, Haddington, propose erection of operating theatre and ancillary ward accommodation to plans by F. W. B. Charles, B.Arch., A.R.I.B.A., 3, Great Stuart-st., Edinburgh, 3.

Edinburgh.—T.C. propose erection of 18 houses at Muirhouse housing area. Plans by City Architect, City-chbrs.

Forres.—B.C. propose to erect scheme of fourth development of traditional stone houses at Anderson-cres.

Glasgow.—Plans to be prepared for alterations and additions for Glasgow University. Alexander Wright (F.), 110, Blythswood-st., Glasgow, W.C.2.

Glasgow.—Plans to be prepared for reconstruction and additions to warehouse and storage building by R. S. King & Co., 33, Virginia-st., Glasgow, C.1.

Glasgow.—Plans are in the hands of their own architects for new buildings to be erected at Pollokshields, between Forth and Darnley-st., by Crockett & Sons, Ltd., 62, Darnley-st., Glasgow, S.3.

Glasgow.—Plans to be prepared for alterations and additions at 94 to 108, Heward-st., for which the architects are Frank Burnet, Boston & Bell (F. & A.), 180, Hope-st., Glasgow.

Glenrothes.—Development Corporation propose erection of 93 houses at Auchmuty, Glenrothes, nr. Markinch, Fife.

Lanarkshire.—Plans in hand for 42 houses which are to be erected by the Scottish Special Housing Association, Ltd. The architect is J. Austin Bent (F.), 15, Palmerston-pl., West End, Edinburgh.

Lanarkshire.—Plans to be prepared for new commercial garage, storage buildings, petrol tank, etc., which are to be erected at Calderbank. The architects are William Stangee & Son, 57, Fir View, Calderbank.

Lanarkshire.—Plans are to be prepared for alterations and additions at Port Dundas for the Scottish Agricultural Industries, Ltd., Glasgow. The architects are Wilson, Hamilton & Wilson (F.), 153, Oxford-st., Gorbals, Glasgow.

Renfrewshire.—Greenock Corporation is to erect a shopping centre for the south-west area at Norfolk-rd. Robert L. Rankine, A.M.Inst.C.E., A.M.T.P.I., architect, Master of Works Office, Wallace-sq., Greenock.

West Lothian.—C.C. propose to build 32 traditional houses at Dalmeny; 16, Livingston Village; and 42 at Uphall.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

APRIL 7.

***†Isle of Wight C.C.**—Phase III sec. sch., The Fairway, Sandown. County A., Newport. Dep. £3 3s. Tenders by May 17.

***†Swansea C.B.**—56 flats, Heol Gwyrosydd, Penlan. H. T. Wykes (F.), Boro' Arch. Dep. £5.

APRIL 12.

Llanelly T.C.—14 houses at Cefncaeu North site. Boro' A., 5, Goring-rd. Dep. £2 2s.

APRIL 14.

Hull T.C.—15 flats and 16 dwellings at New George-st. and Sykes-st. A. Rankine, city architect, Guildhall. Dep. £1 1s.

APRIL 15.

Nidderdale R.D.C.—Seven houses at Boroughbridge. Needham, Thorp and White, architects, 6, High Petergate, York. Dep. £2 2s.

Richmond R.D.C.—14 houses at Colburn-la. Catterick Camp. Norman Dent, Finkle-st.-chbrs. Dep. £1 1s.

***Thurrock U.D.C.**—70 houses at Stifford Clays. E. & S. Dep. £2 2s.

Ventnor U.D.C.—Eight flats at Gloucester-rd. E. & S., Salisbury-gdns. Dep. £2 2s.

***†Wood Green B.C.**—Four shops and 28 flats at Lordship-la. B.E. & S. Dep. £2 2s. Tenders by April 30.

APRIL 16.

Strood R.D.C.—12 houses at Tanyard Hill, Shorne. E. & S., Council Offices, Frindsbury Hill. Dep. £5 5s.

APRIL 17.

Luton B.C.—Improvements and alterations to lavatories at covered market. B.E., Town Hall. Dep. £2 2s.

†Musselburgh T.C.—24 houses at Hercus Loan clearance area. B.S., Municipal Offices.

APRIL 18.

Aberdare U.D.C.—Construction of nine shops, six flats and public conveniences at Penywaun. E. & S., Vestry Hall, Aberdare. Dep. £2 2s.

Banbury R.D.C.—60 dwellings at Neithrop site. B.S., Municipal-bldgs., Marlborough-rd. Dep. £5 5s.

Blyth R.D.C.—Six houses at Cransford. H. W. Lovell, Council Offices, Rendham-rd., Saxmundham. Dep. £2 2s.

Dolgelley R.D.C.—Two houses with site works at Llanymawddwy, nr. Dinas Mawddwy, Machynlleth. M. T. Pritchard, architect, Victoria-bldgs., Dolgelley. Dep. £2 2s.

Inverness C.C.—Construction of reinforced concrete water tank at Upper Finlarig. County Water Engineer, Ardross-st.

***†Lambeth B.C.**—Blocks of flats on small sites. Director of Housing.

***†Romford B.C.**—440 houses and 11 bungalows at Cross-rd. site. A. S. Wilson & Partners, quantity surveyors, 8, Princes-st., Westminster, S.W.1. Dep. £5 5s.

APRIL 19.

Truro T.C.—20 houses at Malpas-rd. City E. & S., Town Hall. Dep. £3 3s.

Truro T.C.—Six bungalows at Campfield Hill and St. Clement-st. City E. & S., Town Hall. Dep. £2 2s.

APRIL 21.

Farnham U.D.C.—Ten houses at Bricksbury Hill housing site. A. J. and L. R. Stedman, architects, South-st. Dep. £2.

***Gravesend B.C.**—69 flats at Valley-drive. B.E. & S. Dep. £2 2s.

***†Lothingland R.D.C.**—26 dwellings on various sites. B. A. Hatcher (A.), Rectory-rd., Lowestoft. Dep. £2 2s. Tenders by May 19.

***Luton B.C.**—Garages on various housing estates. B.E. Dep. £2 2s.

Ormskirk U.D.C.—Erection of 24 houses on the Richmond-ave. estate, Burscough. S., Council Offices, Burscough-st., Ormskirk. Dep. £2 2s.

Surrey C.C.—Hogsmill river improvement scheme. County E., County Hall, Kingston-on-Thames. Dep. £2.

Tavistock R.D.C.—24 houses at Lamerton. Rossington and Fogden, architects and surveyors, National Provincial Bank-chbrs Dep £3 3s.

Tavistock R.D.C.—Four houses at Princetown. Rossington & Fogden, architects and surveyors, National Provincial Bank-chbrs. Dep. £3 3s.

APRIL 23.

***Chester R.D.C.**—22 houses at Capenhurst, nr. Chester. T. C. R. Eaton (A.), 16, White Friars. Dep. £3 3s.

Darlington C.B.—128 houses at four sites. Boro' A., Central-bldgs. Dep. £1 1s.

Haltwhistle R.D.C.—12 dwellings at Aesica-rd. E. & S., Council Offices.

Hungerford R.D.C.—18 houses with outbuildings at Lambourn estate, Newbury-rd. Surveyor, Council Offices, 128, High-st. Dep. £2 2s.

Hungerford R.D.C.—Four houses with outbuildings at Knitbury estate, Craven Way. Surveyor, Council Offices, 128, High-st. Dep. £2 2s.

APRIL 24.

***Berks C.C.**—Caretaker's cottage, Loddon County prim. sch., Sutcliffe-ave., Woodley. County A., Wilton-hse., Parkside-rd., Reading. Dep. £2 2s.

***Sittingbourne and Milton U.D.C.**—84 dwellings, Homewood estate. E. & S. Dep. £3 3s.

APRIL 25.

Great Yarmouth C.B.—Construction of reinforced concrete foundations for maisonettes at Middlegate-st. B.E., Town Hall.

***West Riding of Yorkshire.**—Erection of police houses on various sites. County A., "Bishopgarth," Westfield-rd., Wakefield. Dep. £2 2s.

APRIL 26.

***Bridgwater B.C.**—12 flats at Sydenham housing estate. B.E. Dep. £2 2s.

APRIL 28.

***Letchworth U.D.C.**—Construction of old persons' clubroom and alterations to existing conveniences at Howard-gdns. E. L. Johnson, E. & S. Dep. £2 2s.

***†West Sussex C.C.**—Sec. mod. sch. at Chichester. County A., Chichester.

APRIL 30.

***Gosforth U.D.C.**—26 dwelling at South Gosforth Farm estate. E. & S. Dep. £1 1s.

Stroud U.D.C.—30 houses at Cashes Green. E. & S., Council-chbrs., High-st.

MAY 3.

***Walthamstow B.C.**—Estate manager's office and four shops and six bungalows at The Priory Court, Countess-rd. Boro' A. Dep. £2 2s.

MAY 5.

***Great Yarmouth C.B.**—64 dwellings at Middlegate-st. B.E.

MAY 12.

Hemsworth U.D.C.—44 houses and six bungalows at Moorshutt and Kingsley housing estates. Pennington, Hustler & Taylor, architects, 45, Ropergate, Pontefract. Dep. £2 2s.

MAY 13.

***Salford T.C.**—36 flats at corner of Devonshire-rd. and Eccles Old-rd. City E. Dep. £3 3s.

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EXPORT ENQUIRIES INVITED

MAY 21.

***Lincoln (Lindsey) C.C.**—Mod. sch. at Westcliffe, Scunthorpe. F. Gibberd (F.), 8, Percy-st., London, W.1.

NO DATE.

Brixham T.C.—Four bungalows at Vicarage-rd. John Mackenzie, architect, Rosebery, Windmill-rd.

Cheltenham R.D.C.—Six houses at Twyning. Rainger, Rogers and Smithson, architects, 29, Rodney-rd.

***Ongar R.D.C.**—42 houses, Shelley estate. B. & S., Bowes Field, High-st., Chipping Ongar. Dep. £2 2s.

Shrewsbury.—Three cottages and two sets of farm buildings at Harlescott Farm. County Land Agent, 1, College-hill.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

APRIL 11.

†Mitcham B.C.—Installation of open fireplaces in 37 houses at Bordergate housing estate. B.E. & S., Town Hall. Tenders by April 23.

APRIL 14.

Glasgow T.C.—Office of Public Works. (Materials.)

APRIL 16.

†Gateshead C.B.—Electrical installation at proposed offices, Shipcote. Chief Architect, Swinburne-st. Dep. £2 2s. Tenders by May 7.

†Gateshead C.B.—Heating and hot water supply to proposed offices at Shipcote. Chief Architect, Swinburne-st. Dep. £2 2s. Tenders by May 7.

APRIL 17.

Luton B.C.—Installation of hot water services at covered market. B.E., Town Hall. Dep. £2 2s.

APRIL 18.

***Chertsey U.D.C.**—External decorations of council properties. E. & S.

APRIL 19.

Haslemere U.D.C.—Supply of granite chippings (475 tons). Surveyor, Council Offices.

***†Swansea C.B.**—Heating and water services at West Penlan sch., Penlan. Boro' A. Dep. £2.

APRIL 22.

***Harrow U.D.C.**—External painting and renovations to 700 houses on three sites. J. H. Melville Richards, E. & S. Dep. £2 (each).

APRIL 23.

***Chesham U.D.C.**—Exterior painting of 154 houses. W. B. Mitchell, E. & S. Dep. £1 1s.

ROADS, SEWERAGE AND WATER WORKS

APRIL 9.

Rugby R.D.C.—Construction of estate roads, etc., at Townsend-la. Council's Surveyor, 24, Warwick-st. Dep. £2 2s.

APRIL 16.

†Cambridge T.C.—Resurfacing of carriageways at King's Parade—Trumpington-st. City E. & S., The Guildhall. Dep. £2 2s.

†Hendon B.C.—Construction of roads and sewers on housing site No. 14. B.E. & S., Town Hall. Dep. £2 2s.

Sittingbourne and Milton U.D.C.—Provision of cold asphalt carpets on three sections of trunk-rd. No. 34 (A.2). E. & S., High-st. Dep. £3 3s.

APRIL 18.

Banbury B.C.—Road and sewer works at Neithrop housing site. B.S., Municipal-bldgs., Marlborough-rd. Dep. £5 5s.

†Bingley U.D.C.—Main sewerage at Cottingley. D. Balfour & Sons, consultant engineers, 131, Victoria-st., Westminster, S.W.1. Dep. £5.

Colne B.C.—Surface dressing of roads. B.E. & S., Town Hall.

APRIL 19.

Herne Bay U.D.C.—Construction of roads and sewers at Greenhill housing estate and at Victoria Park, Herne Bay. E. & S., Council Offices. Dep. £2 2s.

Llandilo R.D.C.—Construction of Penygoyallt (Llanegwad) Water Supply Scheme. Council's E. & S., Council Offices, Crescent-rd. Dep. £5 5s.

Portsmouth T.C.—Construction of steel rising main along Eastern-rd. City E., 1, Clarence-parade. Dep. £5 5s.

APRIL 21.

Maidstone B.C.—Roads and sewers on section 8 of the Shepway Farm estate. B.S., Palace-ave., Maidstone.

***†South Wales and Monmouthshire University College.**—Approach road, drainage, etc., on new playing fields site nr. Cardiff. T. Alwyn Lloyd and Gordon, architects, 6, Cathedral-rd., Cardiff. Dep. £2 2s.

APRIL 22.

Aberystwyth B.C.—Completion of site works on the Plas Helyg housing site. B.S. & W.E., Park-ave., Aberystwyth. Dep. £2 2s.

Elstree R.D.C.—Construction of roads and sewers at Cowley Hill housing estate, Boreham Wood, Herts. E. & S., Council Offices, Shenley-rd., Boreham Wood. Dep. £2 2s.

APRIL 23.

Kingston-upon-Thames B.C.—Surface dressing of roads. B.S., Guildhall. Dep. £2 2s.

APRIL 24.

Sunbury-on-Thames U.D.C.—Surfacing of carriageway within the area. E. & S., Council Offices, Sunbury-on-Thames, Mddx.

APRIL 25.

***Bicester U.D.C.**—Roads, footpaths, sewers and water service for approx. 100 houses. H. W. Smith & Son, architects, 29, George-st., Oxford. Dep. £2 2s.

Leicester T.C.—Roads and sewers at Scraptoft housing estate. City Surveyor, Town Hall. Dep. £1 1s.

Mid-Glamorgan Water Board.—Provision and laying of main from Schwyll to Porthcawl. Thomas and Morgan and Partners, civil engineers, 23, Gelliwastad-rd., Pontypridd. Dep. £5 5s.

APRIL 28.

***Epping U.D.C.**—Roads and sewers at Beaconfield housing estate. S., 91, High-st. Dep. £2 2s.

Luton B.C.—Surface dressing of roads. B.E., Town Hall. Dep. £2 2s.

APRIL 29.

Stalybridge B.C.—Cold asphalt surfacing on county roads. B.E., Town Hall.

MAY 1.

Middleton B.C.—Two-coat asphalt surfacing of roads within the borough. B.E. & S., Town Hall, Middleton, nr. Manchester. Dep. £1 1s.

Middleton B.C.—Surface dressing of classified and district roads within the borough. B.E. & S., Town Hall, Middleton, nr. Manchester.

GENERAL BUILDING WORK

(LONDON)

Croydon.—New Parish Hall.—Parochial Church Council of Addington, c/o Rev. B. R. Page, 5, Lodge-la., New Addington, propose erection of new parish hall at Arnhem-dr. and have received town planning permission.

Croydon.—Assembly Workshop.—H. Tinsley & Co., Ltd., seek town planning approval for proposed assembly workshop at Wendee Hall, Stanger-rd., S.E.25.

Greenwich.—Flats.—B.C. Housing Committee have approved plans by Boro' Engineer and Surveyor for erection of 16 flats at Kinveachy-gdns. housing site.

Greenwich.—Flats.—B.C. Housing Committee have adopted the proposal for development of Ashburnham-pl. housing site, comprising 12 flats. Plans by Boro' Engineer and Surveyor.

Hammersmith.—Flats.—Boro' engineer has prepared layout for 48 flats at Blythe-rd.

Hornchurch.—Prefabricated Building.—Town planning approval has been granted to Cawood, Wharton & Co., Ltd., for proposed prefabricated building for use as offices at 307-309, South-st. Plans by firm's own staff.

Islington.—Dwellings.—B.C. Housing Committee has appointed E. C. P. Monson, F./A.R.I.B.A., 120, Moorgate, E.C.2, architects for housing scheme at Whadcoat-st. (No. 1) clearance area.

Islington.—Housing Scheme.—O. E. Parratt, F.R.I.C.S., has been appointed quantity surveyor for housing scheme at Whadcoat-st. (No. 1) clearance area.

Leyton.—Factory Extension.—Charles Living & Son, F.R.I.C.S., L.R.I.B.A., F.R.S.A., 233, Leytonstone-rd., E.15, have prepared plans for extension to factory, etc, at Cann Hall-rd., E.11, for Devine Bros.

Leyton.—Additional Office.—Brown and Brown, 27, Islington High-st., N.1, have prepared plans for additional office at Grange-rd. for R. Ramsden & Son, Ltd.

Leyton.—Extension to Hall.—C. H. Browning & Co. have applied for permission to extend church hall at Brewster-rd., E.10.

Leyton.—Factory Addition.—Darby & Sons (Leyton), Ltd., seek permission for factory addition at Lea Bridge-rd.

Poplar.—Shops and Maisonettes.—Rider, Hunt and Partners, Bridge House, Queen Victoria-st., Blackfriars, E.C.4, have been appointed quantity surveyors for proposed erection of shops and maisonettes at Roman-rd. area, by B.C. Town Planning and Housing Committee.

Poplar.—Appointment.—B.C. Town Planning and Housing Committee have recommended appointment of Rider, Hunt and Partners, Bridge House, Queen Victoria-st., Blackfriars, E.C.4, quantity surveyors for block 6 housing scheme at Chipka-st.

Rainham.—Factory.—Warner, Sinclair & Co., Ltd., have received town planning approval for erection of factory, etc., at Ferry-la.

South Norwood.—Additional Storey.—Town planning permission has been granted to Henderson's Film Laboratories, Ltd., 8-20, St. Dunstan's-rd., S.E.25, for proposed additional storey to laboratory at 18-20, St. Dunstan's-rd. Firm's architects are Roberts and Hastings, F./A.R.I.B.A., 19, Hanover-sq., W.10.

Upper Norwood.—Houses.—Church Commissioners of England, 5, Great College-st., Westminster, S.W.1, have received town planning permission for use of land at Beulah Hill for proposed erection of six houses.

Whitehorse Manor.—Machine Shop.—E. F. Starling, B.A., A.R.I.B.A., 6, Queen Anne's Gate, S.W.1, has prepared plans for machine shop at Windmill-rd. for Gillett and Johnston, Ltd., Union-rd., Croydon.

(PROVINCIAL)

Amble.—U.D.C. S. to prepare plans for 52 houses at Links estate.

Atcham.—R.D.C. propose erection of two houses at Bomere Heath; six, Buildwas; and eight at Minsterley.

Atherton.—Lancs E.C. propose erection of sch. Architects are J. C. Prestwich & Sons, Bradshaw-gate-chbrs., Leigh.

Audenshaw.—U.D.C. approved plans by Ford Bank Estates, Ltd., 25, Cross-st., Manchester, for 28 houses; W. Hughes, Audenshaw, 7; and S. Kelley & Bros., Ltd., Ashton, for 20 houses.

Baginton.—Warwick R.D.C. to erect 28 dwellings at Rowley-rd.

Bakewell.—R.D.C. propose 15 houses at Baslow.

Birmingham.—Reg. Hospital Brd. proposes tuberculosis clinic; gynæcological and physiotherapy departments; new kitchen; and two new wards at the Coventry and Warwickshire Hospital.

Blackburn.—E.C. propose erection of new tech. college on site bounded by Montague-st., Nab-la., St. Paul's-ave. and Feilden-st., at est. cost of £750,000. Architects are Willink & Dodd, Cunard-bldgs., Liverpool.

Blackpool.—B.C. propose erection of 67 houses at Branstree-rd., Mereside estate.

Blackpool.—The Management of the Imperial Hydro propose reinstatement of the building at est. cost of £100,000.

Bolton.—F. Bradley, architect to Manchester Reg. Hospital Brd., 4, Wood-st., Bolton, has prepared plans for pathology laboratory, canteen and recreation room at District Hospital.

Bradford.—T.C. approved layout for 20 houses at Haworth-rd. and Heights-la.

Brierley Hill.—Bromley Methodists propose erection of new church, at est. cost of £12,000.

Brierley Hill.—Marsh & Baxter, Ltd., propose expenditure of £250,000 on new buildings and plant installations.

Burnley.—E.C. to prepare plans for cty. jun. sch. at Raegrove.

Bury.—M.O.H. & L.G. approved erection of St. Bede's R.C. Church at Fairfield.

Caernarvonshire.—E.C. propose final instalment of Portmadoc gram. sch.; and new science block at Llandudno gram. sch., £24,000.

Carlisle.—Cumberland and Westmorland T.A. propose new four-storey building at corner of Albert-st. and Swifts-la.—M.O.W. propose new office buildings between Lowther-st. and George-st.

Chesterfield.—Newbold Parish Council propose extensions to present church, and erection of new church at Whittington Moor.

Chesterfield.—B.C. approved plans for new jun. sch. at Newbold. Architects are Wilcockson & Cutts, 112, Saltergate.

Chichester.—Saxon, Snell & Phillips, architects, 9, Bentinck-st., W.1, have prepared plans for thoracic unit at St. Richard's Hospital.

Corby.—P. Phipps & Co., Ltd., Northampton, propose erection of new hotel at junction of Studfall-ave. and Tanfields-dr., £25,000; James Hole & Co., Ltd., Newark-on-Trent, propose new hotel, The Shire Horse, at Rockingham-rd., £20,000.

Coventry.—D. W. Bridgwater, A., 42, Bruton-pl., W.1, has prepared plans for 100 houses at Old Park Farm estate.

Coventry.—Trustees of Christ Church, Union-st., propose erection of new church at Frankpledge-rd.

Crompton.—U.D.C. S., Town Hall, Shaw, Oldham, has prepared layout for 30 houses.

Crook.—Pithead baths are to be erected at Hole-in-the-Wall Colliery. Plans by N.C.B. Architects' Dept., Ashfield Towers, Gosforth, Newcastle-on-Tyne.

Dudley.—Webb & Gray, architects, 200, High-st., Dudley, have prepared plans for 220 houses at Sledmere estate.

Durham.—Cty A., Court-la., Durham, has prepared plans for provision of additional hutted accommodation at 18 schools, for C.C.

Durham.—Durham Coal Board plan setting up medical centres at Washington "F," Usworth, Fishburn, Langley Park, Brancepeth and Watergate pits. Plans by Architects' Dept., Ashfield Towers, Gosforth, Newcastle-on-Tyne.

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OUR NEW SUPER-HARD FLOORING TILES NOW SPECIFIED BY LEADING ARCHITECTS

"THE BUILDER" PRICES

COPPER

The Ministry of Materials has announced that as from April 1 the price of electrolytic copper has been increased from £227 to £231 per ton delivered consumers' works. Discounts and premiums for special shapes remain unchanged. The Ministry of Supply is making arrangements for corresponding adjustments in the controlled prices of scrap and secondary metal.

The higher price is made necessary by the extent of the overhead charges (including refining) which the Ministry has to bear.

The Ministry selling price is still well below the free market price prevailing in many other countries.

BRASS AND COPPER TUBES

In consequence of the increase in the price of copper announced on April 1, the Brass and Copper Tube Association states that the basis prices of tubes have been increased as follows:—

	Increased by	*Basis Price*
Copper tubes	½d. = 26½d.	per lb.
Brass tubes	½d. = 25½d.	„
Copper-nickel tubes 70/30	½d. = 33½d.	„
Other alloys	Prices on application	

The list prices of condenser ferrules have also been increased as follows:—

	Increased by
Brass and aluminium brass ferrules ..	½d. per lb.
Copper-nickel ferrules 70/30	½d. per lb.

SECONDARY UNWROUGHT COPPER

The Minister of Supply, Mr. Duncan Sandys, has made an order reducing the maximum controlled price of secondary unwrought copper, other than electrolytic and fire refined ingot bars and wire bars, and cathodes, from £200 to £185 per ton.

In addition the order includes a provision for special prices to be authorised for unusual requirements of unwrought copper.

The order—the Non-Ferrous Metals Prices (No. 9 Order) (Amendment No. 2) Order (Statutory Instrument 1952 No. 685)—came into effect on April 1. It is on sale at H.M.S.O., price 2d.

VIRGIN ALUMINIUM

The Ministry of Materials has announced that as from April 1, the price of virgin aluminium in ingot form has been increased from £148 to £154 per long ton delivered into consumers' works. For metal in notch bar form there has been an addition of £2 10s. a ton over the former price.

The new price applies to metal of a purity of 99 per cent to 99.5 per cent inclusive. The premiums to be paid for higher purity ingot will remain unaltered.

The change in price is mainly due to the increased cost of imported supplies, but the higher cost of home produced aluminium has also been taken into account.

TUNGSTEN

The Ministry of Materials has also announced that as from March 31, the price of tungsten ore of standard 65 per cent grade and ordinary quality has been reduced from 535s. to 500s. per long ton unit delivered consumers' works. The new price is related to the current price of imported supplies.

Felling.—S. H. Lawson, Emerson-chbrs., Newcastle-on-Tyne, is A. for alterations to Half Way public-house, High-st.—Smith, Gore & Co., Ltd., 81, Bondgate, Darlington, have prepared layout plans for Grange estate on behalf of Church Commissioners.—U.D.C. to build 16 houses at Windy Ridge.—Gateshead T.C. plan to erect 244 houses on land within Felling urban area.

Formby.—Cty. A., County Offices, Preston, has prepared plans for fire station at Church-rd.

Grimsby.—Boro' A. has prepared plans for three-storey houses at Weelsby-rd. and Carr-la. estates.

Guildford.—Boro' S., Municipal Offices, High-st., has prepared plans for 550 houses at Park Barn extension.

Halifax.—B.C. propose additional accommodation at John W. Hersfall Home for the Blind.

Haltwhistle.—R.D.C. to erect 12 old people's houses at Aesica-rd. Plans by E. & S., J. Dand, Council Offices, Haltwhistle.

Heywood.—B.C. seek additional allocation of 38 houses for development of Unity-st. site.—B.C. approved plans for potcher and beater house and Simpson clough mills for J. R. Crompton & Bros., Ltd., Elton Paper Mills, Bury; and body assembly shop and timber store at Doctors Fold-la., for Magnet Motor Bodies, Ltd.

Hinckley.—U.D.C. S., 9, Station-rd., has prepared layout for 60 houses at three estates.

Hyde.—B.C. propose 200 houses at Cheetham Fold estate and eight at Harbour Farm estate.

Ilkeston.—Boro' S., Town Hall, has prepared plans for 52 houses at Kirk Hallam estate.

Kent.—Cty. A., Springfield, Maidstone, has prepared plans for sec. sch. at Broadstairs, to cost

£141,000; cty. prim. sch., Anerley, £41,500; and cty. prim. at Sheerness, to cost £72,600.

Kendal.—B.C. to erect 70 houses at Hall Garth estate.

Kidderminster.—F. Gibberd, A., 8, Percy-st., London, W.1, has prepared plan for college of further education at Hoo-rd., for Worcs. C.C.

Leeds.—T.C. to build 44 dwellings at Reuben-st. area.

Leyland.—Charles Henry Barber, Bolton, proposes erection of £13,000 hotel at site between Leyland-la. and Earnshaw-dr.

Lichfield.—R.D.C. to build 18 dwellings at Stonnall and 18 at Whittington.

Liverpool.—T. N. Mitchell, Reg. A., Church-st., Liverpool, has prepared plans for erection of Chest Clinic at Sefton General Hospital.

Newcastle-under-Lyme.—M.O.E. approved Langdale two form entry jun. sch. in building programme for 1952/53.—Metanodic (Engineers), Ltd., propose new works at Holditch; Remploy, Ltd., propose new factory between Ellison-st. and Minton-st.; B.T.-H. Co., Ltd., Rugby, propose extensions at Lower Milehouse-la.; Staffs C.C. propose additional accommodation at Water-st.; Staffs Egg Producers, Ltd., propose new cold store at Holditch; Salt & Sons, propose garage, office, etc., at Bridge-st.; Swettenhams, Ltd., propose office extensions at Sutton-st., Chesterton; J. Hammond & Co., Ltd., propose extensions at Enderley Mills; The Knutton British Legion propose extensions at Church-la.; The Bradwell Working Men's Club and Institute propose new club premises at Bradwell-la., Porthill; Wildblood Bros., Ltd., propose alterations at Pool Dam Mill; Trustees of Grove Methodist Church propose new Church Hall at London-rd.; Newcast Foundry, Ltd., propose extensions at Cemetery-la.; Apex Fireplace Co., Ltd., propose canteen at Meadow-st.; Billington & Newton, Ltd., propose extensions to foundry at Longport; and N.C.B. propose repair and stores building at Wolstanton.

Newquay.—U.D.C. S. has prepared layout for 56 houses at Doublestiles site.

North Riding.—Cty. A., County Hall, Northallerton, has prepared plans for ambulance station at Bullamore-rd., Northallerton.

Northumberland.—E.C. has approved final plans by Cty. A., C. C. Brown, County Hall, Newcastle-on-Tyne, for proposed Ovington cty. mod. sch.

Nottingham.—City housing A., Guildhall, has prepared plans for 120 houses at Fernwood estate, Wollaton.

Peterlee.—Durham C.C. propose to build health centre, at est. cost of £32,000. Plans by G. R. Clayton, Cty. A., Court-la., Durham.

Richmond.—R.D.C. propose erection of 14 houses at Colburn-la., Catterick. Architect is N. Dent, Finkle-st.-chbrs., Richmond, Yorks.

Salford.—T.C. Housing Com. propose erection of flats, shops, maisonettes, rectory, health centre, public-house and community centre at Trinity housing site.

Salford.—T.C. Housing Com. to build 57 flats at Lord-st.

Salford.—T.C. Housing Com. propose erection of 66 flats at Islington housing site.

Salford.—T.C. Housing Com. propose erection of 48 flats at Bury-st. and part of Trinity housing site.

Staffs.—C.C. to approve erection of new fire and ambulance station at Cheadle.—E.C. propose following in 1953/4 schools programme:—Extensions to Wednesbury cty. commercial college; completion of Lichfield School of Art; stage 3 of Staffs tech. college; and extensions (Stage 2) to Cannock Chase Mining College.

Startforth.—Boddy & Bell, architects, Thomas-st., Darlington, have prepared plans for 12 houses at Mickleton.

Stockton-on-Tees.—Russell & Wrangham are to erect temporary public-house at Durham-rd.—Stockton Co-op. Society, Wellington-st., Stockton, seek sites on the Ragworth estate for erection of four shops.—T.C. has approved plans by J. W. Cameron & Co., Ltd., Lion Brewery, West Hartlepool, for proposed Rimswell Hotel at Fairfield-rd.—M. Trotter, High-st., Stockton, has prepared plans for canteen at Portrack-la., for G. Brown & Bros., Ltd.—R. Cowan, 20, Finkle-st., Stockton, has prepared plans for extensions to car sales rooms at Norton-rd., for Charlton's Motor Sales.—G. P. Stainsby, 57, High-st., Stockton, has prepared plans for alterations at Norton-rd., for C. W. Chapman & Co., Ltd.—Aerex, Ltd., 46, Rutland-park, Sheffield 10, are to carry out additions to the Phœnix Works, —Montague Burton, Ltd., Hudson-rd. Mills, Leeds, propose shop at High-st.—Boro' E., G. Cowan, has prepared plans showing erection of bus station at High-st.

Sunderland.—The Vacuum Oil Co., Ltd., Metrovick House, Northumberland-rd., Newcastle, are to establish a depot with storage and distribution facilities at South Docks, Sunderland. Est. cost is £50,000.

Sunderland.—R.D.C. S. has prepared layout of 294 houses at Castletown, Tunstall.

Taunton.—Boro' housing A. has prepared plans for 100 houses at Pyrland housing estate (stage two).

West Bromwich.—Boro' S. has prepared plans for 90 houses and flats at Yew Tree estate.

West Lancs.—R.D.C. seek loan of £20,856 for 16 dwellings at Cousins-la., Rufford.

Whitby.—U.D.C. to build 106 houses at Mount Housing estate. Architect is C. D. Taylor, 41, Baxtergate, Whitby.

Wolverhampton.—B.C. issued block licence to Wm. Whittingham, Ltd., Powlett-st., for erection of first instalment of 42 houses at Muchall Manor Farm estate.

Workington.—Boro' S. has prepared layout for 110 houses at Northside estate; 256, Westfield estate; and 50 at Salterbeck.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Airdrie.—Erection of new houses for Corporation. Henry Shaw, architect, Municipal-chbrs., 1b, Bank-bldgs., Graham-sq., Airdrie: *The Weir Housing Corporation, Ltd., Coatbridge.

Banbury.—Eight dwellings at Milton for R.D.C. Architects are Earp & Badger, Stratford-on-Avon, and quantities by J. Cresswell, Banbury: *A. Bray and Sons, Adderbury, nr. Banbury, £14,346.

Bourne.—12 houses and six bungalows at Mill Drove housing estate, for U.D.C. Architect is C. E. George, A.R.I.B.A., 6, West-st.:—
L. P. Longland, Langtoft, Peterborough £27,849
*W. Foster & Sons, 41, Castlegate, Grantham (after reduction) 22,427

Bradford.—22 houses, Netherlands-ave., for T.C.: *H. G. Brooke, Ltd., Bradford, £31,548.

Brandon (Co. Durham).—Erection of pithead baths at Pit House Colliery. Plans by N.C.B. Architects' Dept., Ashfield Towers, Gosforth, Newcastle-on-Tyne: *George Gradon & Son, North-rd., Durham.

Carlton.—Dwellings at Thoresby-ave. site, for U.D.C. E. & S., J. R. Campbell: *W. Westman, Ltd., 158, Bye-Pass-rd., Chilwell, Notts, £27,864.

Chapel-en-le-Frith.—62 dwellings at three sites. Plans by W. E. Colston and quantities by Poole & Dick, Manchester: *Hall Bros., New Mills (Peak Dale), £31,526; *Hall Bros., New Mills (Dove Holes), £30,383: *H. Haywood, Sheffield (Hope), £36,980.

Consett.—Erection of public library: *J. J. Eltringham, Derwent-st., Blackhill, Consett, Co. Durham.

Croydon.—Erection of prim. sch. at Rowdown: *Lawson & Co., Ltd., Park-rd. North, W.3.

Dagenham.—46 houses at Woodlands estate: *C. S. Wiggins & Sons, Hart-rd., Thundersley.

Derbyshire.—Erection of Chaddesden new cty. sec. sch., for C.C., at an est. cost of £227,000: *Ford & Weston, Ltd., Osmaston-rd., Derby.

Dunbartonshire.—Extension to factory at Strathleven for the Leven Industrial Estates, Ltd. John Keppie & Henderson & J. H. Cleaves (F. & A.), architects, 196, West Regent-st., Glasgow, W.C.2: *Angus M. MacDougall & Co., Ltd., Glasgow.

Durham.—Completion of new hostel at Winlaton, for C.C. Plans by Cty. A., Court-la., Durham: *M. S. Failes, Ltd., 199, Coatsworth-rd., Gateshead (transferred from firm in liquidation).

Glasgow.—Erection of the new Bonnybridge school at Eastwood. John MacNab (F.), architect, 129, Bath-st., Glasgow, W.C.2: *Cowieson, Ltd., St. Rollex, Glasgow, N.

Glasgow.—Erection of 42 houses at Blairgardie housing site. Norman MacFadzean (F.), 147, West Regent-st., Glasgow, W.C.2: *John Lawrence (Glasgow), Ltd., Glasgow, W.C.2.

Glasgow.—New housing scheme at Overwood-dr.: *MacTaggart & Mickel, Ltd., 107, West Regent-st., Glasgow, W.C.2.

Hebburn.—36 houses, Hartleyburn-st. estate, for U.D.C.: *H. E. Pitt, Ltd., Leopold-st., Millfield, Sunderland.

Hebburn-on-Tyne.—Four houses, Victoria-rd. West, for Durham County T.A.A.F. Association. Architects, Fennell & Co., Bridge End-chbrs., Chester-le-Street: *G. S. Urban Development Co., Ltd., 38, The Side, Newcastle-on-Tyne.

Houghton-le-Spring.—24 houses on Hetton-rd. estate, for U.D.C. W. H. Smith, S.: *Direct Labour, £30,428.

Hove.—Construction of infant welfare centre at Hangleton, for West Sussex C.C.: *Ringmer Building Works, Ltd., Ringmer, Lewes.

Hull.—43 dwellings at Bilton Grange: *A. E. Jenkinson, 60, Anlaby Park-rd. North.

Ilkeston.—Erection of 52 houses on the Kirk Hallam housing estate. A. O. Marshall,* M.I.Mun.E., M.I.Struct.E., F.I.A.A., Boro' E. & S. Quantities by Gleeds, Nottingham: *F. Sisson & Son, Langley Mill, Nottingham, £65,107.

Leamington Spa.—18 houses, Whitnash estate, for T.C.: *A. R. Lane, Ltd., Leamington.

Leicester.—148 houses and 52 flats, Eyres Monsell estate, for T.C.: *John Laing & Sons, Ltd., London.

Liverpool.—Erection of third instalment of C. F. Mott Training College: *Norwest Construction Co., Ltd., Ruthven-rd., Liverpool.

Liverpool.—Works for T.C.:—12 flats at Beaumont-st. area: *Tysons (Contractors), Ltd., Dryden-st., Liverpool 5, £24,632; 12 flats at Foley-st. area: *Thomas Rimmer, 14, Nazeby-ave., Crosby, Liverpool 28.

¶London (Admiralty).—Particulars of contracts placed by Civil Engineer-in-Chief's Department, Admiralty:—
Portsmouth: Redecoration of gymnasium and drill shed, C. T. Painters, Ltd., Mordaunt-rd., N.W.10.

¶London (Air Ministry).—Contracts to the value of £500 or over placed by Directorate of Contracts for week ended March 29:—
Civil engineering work: Hussey, Egan & Pickmere, Ltd., Birmingham, 4; Downing Rudman & Bent, Ltd., Chippenham, Wiltshire. *Extension to runways*: M. J. Gleeson (Cttrs.), Ltd., Sheffield, 8. *Concrete platforms, etc.*: Trollope & Colls, Ltd., London, W.C.1; H. Boot & Son, Ltd., Sheffield, 11. *Building work*: Arthur J. Arnold, Ltd., Chelmsford, Essex; G. & J. Seddon, Ltd., Little Hulton, nr. Bolton; Cubitt & Gotts, Ltd., Ipswich; C. Cornes & Son, Hanley, Stoke; John Laing & Son, Ltd., London, N.W.7; Tersons, Ltd., London, E.C.1; Jesses Mead, Ltd., Chesham, Bucks; T. F. Howell, Ltd., Caerphilly, Glamorgan; Perry & Williamson, Ltd., Wolverhampton, Staffs.
Construction of fuel installations: Sherfield Bros., Farnham, Surrey; R. Corben & Son, Ltd., Maidstone, Kent; Sadler & Sons, Ipswich; Cubitt & Gotts, Ltd., Ipswich; Farrans (London), Ltd., Cardiff; Crowley Russell & Co., Ltd., Glasgow, C.2; J. Young & Son, Ltd., Norwich; James Barclay, Kilmarnock; F. Shepherd & Son, Ltd., York. *General maintenance work*: J. H. Metcalf Bros., Doncaster, Yorkshire; W. Lawrence & Son, Ltd., Swaffham, Norfolk; W. E. Chivers & Sons, Ltd., Devizes, Wiltshire; Robt. Durie (jun.), Tayport, Fife; Frank R. Freeman, Ltd., London, N.W.1; Stone & Co. (Bristol), Ltd., Bristol. *Painting work*: Clark & Fenn, Ltd., London, S.W.4. *Resurfacing work*: Allweather Mechanical Grouting Co., Ltd., London, S.W.1.

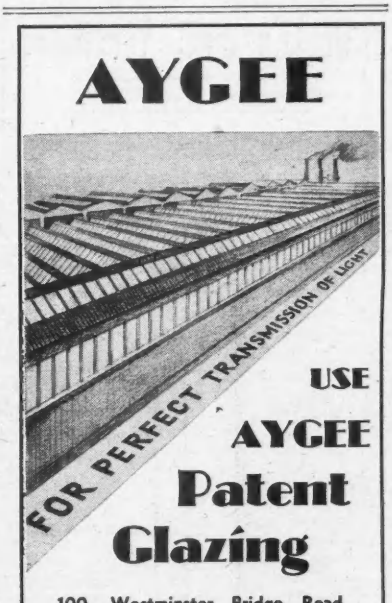
¶London (M.O.W.).—Contracts placed by M.O.W. for week ended March 22:—
Buckinghamshire: Marsworth Airfield, nr. Cheddington, Erection of magazines and auxiliary buildings, A. Roberts & Co., Ltd., 79, Eccleston-sq., S.W.1. *Essex*: Thorpe Bay Coast Guard Station Cottages, Adaptations, A. W. Brett-Pitt, Colbert-ave., Thorpe Bay. *Lanarkshire*: Uddingston, Erection of telephone repeater station, A. A. Stuart & Sons (Glasgow), Ltd., 2275, London-rd., Glasgow, E.2. *Norfolk*: Kings Lynn H.P.O. & T.E., Norfolk, Alterations, additions and decorations, Oliver Staines & Son, 16, Station-st., Swaffham. *Staffordshire*: M/Labour, 19, Beacon-st., Lichfield, Adaptations, Exors. of John E. May, Alrewas, Burton-on-Trent; A.R.S. Cold Norton Farm, Stone, Erection of Farm Manager's house, M. A. Boswell (Contractors), Ltd., School-st., Wolverhampton.

¶London (War Dept.).—Works contracts placed by W.D. for week ended March 22:—
Yorkshire: Building work, T. Belt & Sons, Ltd., York. *Durham*: Concrete work, Ralph Bowey & Sons, Ltd., Newcastle-on-Tyne. *Lancashire*: Hutting, W. A. Gale, Ltd., Bootle. *Kent*: Building work, Edmund Dunn, Ramsgate. *Surrey*: Concrete work, The Foven Construction Co., Ltd., St. Mary Cray. *Co. Down*: Miscellaneous, Henry Cole, Newry. *Hampshire*: Building work, Geo. Kemp Stroud & Co., Ltd., Aldershot. *Berkshire*: Painting and decorating, Fields, Ltd., Reading.

Long Eaton.—Construction of new sec. mod. sch., for Derbys E.C.: *F. Perks & Son, Ltd., Long Eaton, Nottingham.

Ludlow.—Erection of eight houses at Sandpits-rd. site, for B.C. Architects, S. N. Shrimpton & Son, 5, Castle-st., Ludlow. Quantities by J. Kirkham Dale & Son: *John Bromley & Sons, 74, Watling-st., Church Stretton, £22,100.

Luton.—60 houses at Ramridge housing estate. Plans by F. Oliver, A.M.I.C.E., Boro' Engineer, and quantities by Boro' Engineer's dept.:



Lindum (Lincoln), Ltd., Cauldwell-walk, Kempston-rd., Bedford £85,493
Drabble Construction, Ltd., Rushden, Northants 81,783
C. H. Chaston & Co., Ltd., Essex-rd., Hoddesdon, Herts 79,154
*H. D. Carter, Ltd., 3-5, Alexander-rd., N.19 72,102

Middlesbrough.—Erection of prim. sch. at Greenla.: *Leslie & Co., Woodlands-rd., Darlington.

Newcastle-on-Tyne.—252 flats in "No Fines" construction, Slatyford-la. estate, for City Council. City A., G. Kenyon, 18, Cloth-market, Newcastle: *Wimpey & Co., Ltd., Hammersmith-gr., London, W.6, £368,650.

Newcastle-on-Tyne.—Alterations, Market-st., for Lloyds Bank, Ltd. Architects, Cackett, Burns Dick & Mackellar, 21, Ellison-pl., Newcastle: *Thomas Clements & Son, Selborne-gdns., Jesmond, Newcastle-on-Tyne.

Newcastle-under-Lyme.—Houses for B.C., Earls-dr. estate: *Baddeley Bros., £28,810 (22); *J. E. Robinson, £14,635 (11). Both of Newcastle.

Northumberland.—Erection of Morpeth Stobhill Gate cty. prim. sch., for C.C. Cty. A., C. C. Brown, County Hall, Newcastle-on-Tyne: *Taralag, Ltd., Boweafield-la., Stockton-on-Tees, £64,000.

Penryn.—Eight houses, Saracen estate, for T.C.: *James Howarth & Partners, £11,690.

Peterborough.—Houses at Dogsthorpe North estate: *J. W. Barber & Son, Ltd., Brewster-ave., Woodston, Peterborough (24); *H. R. Taylor, 23, Meadclose, Walton, Peterborough (36); *S. B. Fairchild, 11, Welland-rd., Peterborough (12); *G. Matthews & Son, High-st., Eye, Peterborough (18); and *Charles W. Shelton, Ltd., 30, Westwood Park-rd. (80).

Rotherham.—Conversion of Chatham House to nurses' home, Doncaster Gate Hospital, for Reg. Hospital Brd.: *Chadwick & Co. (Rotherham), Ltd., £6,097.

Seaham.—32 houses for U.D.C. A. M. Smith, S.: *W. Tomlin & Son, Seaham.

South Shields.—First stage of new marine and tech. college at Westoe, for E.C. Architects, Meade Taylor & Wilson, 17, Sheffield-ter., Camden Hill, London, W.8: †Henderson Bros., Smith-st., Tyne Dock, South Shields, £193,628.

South Westmorland.—Dwellings for R.D.C.:—Four houses, Witherslack: *Mr. F. G. Postlethwaite, Grangeover Sands, £7,219; four flats, Lunefield-dr., Kirkby Lonsdale: *J. Dixon & Son, Carnforth, £5,171; 10 houses, Boon Tow, Burton, and 10 at Levens: *Warren Construction Co., Ltd., Carnforth, £15,343 and £15,060, respectively.

Stockton-on-Tees.—Additions to Mill-la. Girls' sch., for E.C.: *L. Brown & Son, Boathouse-la., Stockton, £5,520.

Stoke-on-Trent.—Reconstruction of Cliffe Vale Potteries, for Twyfords, Ltd.: *G. Percy Trentham, Ltd., Wood-la., Erdington, Birmingham 24.

Tynemouth.—Alterations to Central Library, Howard-st., North Shields, for T.C.: *F. P. Dodsworth, Hill Heads, Whitley Bay (fresh tender).

Urmston.—Extensions to St. Mary's Church, Davyhulme, for Parish Council: *Henry Green & Son (Builders), Ltd., Stocks House, Cheetham Hill, Salford.

Worthing.—24 flats at Pavilion-rd. and St. Elmo-rd.: *Worthing Estates Building Co., Ltd., 72, Broadwater-rd.

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